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SKIN DISEASES:

THEIR

DESCRIPTION, PATHOLOGY, DIAGNOSIS, AND TREATMENT.

SKIN DISEASES:

THEIR

DESCRIPTION, PATHOLOGY, DIAGNOSIS, AND TREATMENT.

BY

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THIRD EDITION,
RE-WRITTEN AND ENLARGED.

WITH A CUTANEOUS PHARMACOPŒIA, A GLOSSARIAL INDEX
AND SIXTY-SEVEN ADDITIONAL ILLUSTRATIONS.

HENRY RENSHAW,
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DEDICATION.

TO

ERASMUS WILSON, F.R.S.,

PROFESSOR OF DERMATOLOGY IN THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

This Volume is Dedicated,

WITH A FEELING OF ADMIRATION FOR THE TALENTS AND THE WORK, WHICH
HAVE RIGHTFULLY EARNED HIM
A PROUD POSITION,
AS THE ACKNOWLEDGED HEAD OF DERMATOLOGISTS:
AND FOR THE FOSTERING CARE WHICH HE HAS EXHIBITED TOWARDS DERMATOLOGY
FOR NEARLY HALF A CENTURY;
BUT NOT LESS IN ACKNOWLEDGMENT OF MANY PERSONAL ACTS OF
KINDNESS AND FRIENDSHIP,

BY THE AUTHOR.

PREFACE

TO

THE THIRD EDITION.

THE second edition of this work, which was a very large one, is now exhausted, with the exception of a few copies; and whilst I am called upon to furnish the English reader with a third, a new American edition is required. The work is also about to be issued as a text-book in Italy. These circumstances may, I think, be fairly regarded as conclusive evidence of the practical character and usefulness of the book, and I have redoubled my efforts to improve it. In fact, it is practically a new one. It has left my hands rewritten, and with the matter recast, rearranged, and re-illustrated in such manner that I am emboldened to hope I have at length produced a work which may be looked upon as containing the latest, fullest, and best practical information of any book on the subject of skin diseases.

I have written the book in the first instance to meet the wants of the practitioner in his daily dealings with disease; at the same time I have not forgotten what the student requires in his preparation for examinations.

The pathological sections have been particularly amplified, and I am greatly indebted to Dr. Neumann, of Vienna, for allowing me to make such free use of certain of his illustrations, as well as to others whose names are printed in the text.

I do not specify any particular pages of new matter, for the simple reason that there is not a page without it. The reader will find two forms of disease described in detail for the first time under the terms fibroma fungoides and dysidrosis.

I believe that I have simplified matters very materially in regard to the varieties and nomenclature of cutaneous diseases.

Finally, I cannot but express my gratification at the philosophic spirit in which dermatology is being vigorously studied, not only by such men as Neumann, Moritz Kohn, Auspitz, and others, in Germany; Faye, of Christiania, and Nystrom, of Stockholm; but also by a number of American confrères—Taylor, Henry, Haight, Duhring, Wigglesworth, and others, whom I am able to claim as personal friends. I think the profession in general, and dermatology in particular in America, owes much to Dr. Henry for the excellent Journal of Dermatology which he originated and so ably conducts; and I cannot forbear at the same time acknowledging how much I am personally indebted to him as the editor of the American edition of my work.

14, Harley Street,
Cavendish Square,
Jan. 1st, 1873.

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DISEASES OF THE SKIN.

CHAPTER I.

I. INTRODUCTORY REMARKS.

In former editions of this work I devoted some space to comments upon the importance of a careful study, on the part of the student and the practitioner, of diseases of the skin. Such a step, in the face of the present flourishing state of dermatology, and the increasing attention paid to it in all directions and in every country, is a wholly unnecessary one on my part. But I cannot forego the observation that a reputation is easily made, in diagnosing and treating cutaneous ailments, correctly; and for the manifest reason that the course of these diseases, the changes which they undergo, and the effect of remedies upon them, are peculiarly open to the accurate observation, of patients. Patients can speedily judge whether the physician is likely to do them good or harm. The inveteracy and disfiguring character of skin diseases, moreover, greatly affect the personal comfort and vanity of men and women, so that relief is estimated at a comparatively high standard. The only safety to the practitioner lies in his having such a knowledge of the nature of cutaneous mischiefs as will enable him at the outset to make a good diagnosis, to give a reliable prognosis, and to prescribe the remedy which at least does not intensify if it does not alleviate the symptoms of which complaint is made, inasmuch as the patient can observe for himself so readily the real effect of remedies upon his disorder. *What not to do*—what to avoid—in treating skin diseases, which pre-supposes a correct knowledge of their general course and behaviour, is an important lesson to learn in regard to them. In this respect the management of cutaneous diseases has minor peculiarities of its own. But he who would be a successful dermatologist, I have always held, and hold more strongly than ever, must also be a proficient in the principles of general medicine. The successful study of skin disease necessitates a knowledge on the part of the student, whoever he may be, of diseases in general—and he alone can treat cutaneous ailments satisfactorily who is master of the details of general therapeutics. The same disease, as it occurs in persons of different diathetic tendencies, requires to be handled in a somewhat varying manner.

Eczema, for instance, in an old and gouty, a young and pallid, or a scrofulous subject, requires not the same, but modified treatment to meet the circumstances of each particular case. The rank specialist or mere empiric would diagnose the eczema, pay no heed to the diathesis, and employ a therapeutc, which he has stereotyped, as suited to eczema, under all conditions. The philosophic practitioner, bringing into use his knowledge of medicine in general, would be careful to take advantage of known specifics ; but he would treat any constitutional condition which tended to aggravate the main disease, or to prevent reparative action ; and he would rectify errors of function or departures from healthy action in organs and parts which, bearing relation by interdependence of function, thereby influence for evil the already diseased skin. The removal of a stomach, a kidney, a uterine, a liver derangement, a cause of general debility, or one that checks elimination, or that in other ways interferes with the due play of the *vis medicatrix naturæ*, gives a patient a much better chance of getting well under treatment intended to cure a co-existing skin disease. Therefore, to be a successful dermatologist, it is necessary to be a well-informed physician.

The dermatologist has hitherto practically ignored this fact in the pathology to which he has pinned his faith, and the therapeutics he has adopted. I have no hesitation in saying that the best preparation for the study of diseases of the skin, is a good grounding in general medicine, at the bedside and in the dead-house. I also think dermatology has been as much retarded by having been viewed too much from the surgical, as it will be advanced from considering it in the future, from the purely medical point of view in connexion with recent advances in pathological observation.

II. THE MODE OF STUDYING SKIN DISEASES.

I will venture to lay down certain guides, rules, or general principles, which should be observed in entering upon the study of diseases of the skin ; and I will give them categorically. I suppose of course that no one comes to the task without a fair knowledge of general medicine.

1st.—In the first place, the observer should always strip his patient so that the disease may be exposed to the fullest extent compatible with a due regard to the proper feelings and sensitiveness of the individual. To be satisfied with seeing a bit of a patch of disease in this spot, or just a spot or two there where the malady is most marked even, is often to run great risk of arriving at an erroneous diagnosis, if not to actually make one, certainly to miss the recognition of transitional stages, which are of the utmost importance in determining the general character and often the exact nature of a disease.

2nd.—It is of much importance that mere *stages* of diseases should be regarded as stages and nothing else. Diseases must be dealt with in their entireties. Where the whole of a disease is made up in any particular instance of certain stages, in estimating the nature and characteristics of that disease, one stage must not be regarded in particular—be thrust into undue prominence—at the expense of others. The several stages together constitute the disease. I may illustrate what I mean by reference to small-pox, eczema, and ringworm. The former consists of an eruption of an inflammatory kind which has its papular, vesicular, pustular, crusting, and other stages, and in describing small-pox it is usual to say that it consists of certain stages, characterized by certain elementary lesions. The very mention of the word small-pox suggests to the mind the occurrence of certain transitional stages, and the describer would offend against custom and scientific rule if he broke up the disease into papular small-pox, vesicular small-pox, pustular small-pox—if he made *stages, varieties.* But this is exactly what some do with regard to eczema; writers describe erythematous, papular, vesicular, pustular, squamous, dry and moist eczema, and so on; whereas, eczema should be regarded as consisting of certain stages, and every case of eczema (except when abortive) as possessing these stages in a greater or less degree. It is quite right to speak of the papular stage, the vesicular stage, and so on in small-pox. The same rule ought to be observed in the case of eczema. It may be said, Why be so particular? For the very reason that the confusion of stage and variety leads to errors of diagnosis. It leads the observer to regard merely secondary as primary conditions, or even varieties, and to study the disease in a piecemeal manner. Nothing is more common than for the observer to regard ordinary cases of eczema in the squamous stage as a special variety of eczema, and to confuse it with psoriasis, because of losing sight of its earlier phases.

It is as wrong to describe an eczema squamosum as a distinct variety, as to describe the pustular stage of small-pox, or the stage of grey hepatization in pneumonia, or the stage of contraction of the liver or kidney in cirrhosis, as separate varieties of disease, and apart from preceding stages. There are varieties of eczema, but they are based upon the general features, constitutional and local, of classes of cases taken as a whole, stages included.

3rd.—A clear distinction should be drawn between *essentials* and *accidentals*. For instance, the essence of scabies is the acarus in its burrow. All else that follows—the follicular irritation, improperly called lichen, the ecthyma, the urticaria, which may occur in many different diseased states of the skin—is accidental, and due to the irritation and the scratching practised. Yet these secondary occurrences are described as essential parts of the disease. I hold that the ordinary division of scabies into papular, vesicular, and pustular scabies is thoroughly wrong in every way because it is based upon the variations of, and the appearances presented by, mere phases, not of the essentials of the disease, but accidental conditions, the consequence of irritation. So I think scabies should be described as a disease produced by the burrowing of the acarus, whose characteristic lesion is a furrow possessed of certain features, and at the end of which is the embedded acarus; the irritation set up and the scratching practised giving rise to such and such accidental contingencies. This simplifies matters, and gives due pre-eminence to what is the sure diagnostic guide to the disease. Peculiarities in the distribution of accidentals suggest no doubt the nature of the cause and the seat of its operation, as for instance the forearms and penis in adults, the buttocks and feet in children in scabies. Another example is afforded by the interpretation put upon œdema. Now œdema arises from various causes, especially retarded circulation; hence it is seen in connexion with varicose veins of the leg, occurring with eczema of that part, but no one is thereby warranted in making a new variety of disease, E. œdematosum, any more than in the case of erysipelas œdematosum, because œdema is a prominent feature in some cases of the latter. Œdema is a mere accident. No doubt such accidents supply a guide to complicating conditions, but that is all.

4th.—It should be a point with the dermatological student to make as little as possible of mere *superficial* appearances and changes, because these are brought about as the result of, and are indeed often secondary to, more important and primary changes in the deeper parts. This point will be abundantly illustrated in dealing with elementary lesions.

5th.—It is important to pay special attention, as far as possible, to the primary anatomical seat of the disease. What the primary seats of individual diseases are so far as regards cutis, cuticle, follicles, and the like, I shall discuss in another place in speaking of elementary lesions and the individual diseases themselves. I only now wish to make one or two general comments on the matter, so far as the intimate tissues—vessel, blood, cell, and nerve are concerned.

In the first place having, in regard of any diseased conditions present, decided what are essential and what accidental (this has been referred to already) the observer has then to determine the real seat of the primary mischief. Now, theoretically, diseases of the skin must arise in disorder, in the first instance, of either (*a*) the blood, (*b*) the tissues, intimately and anatomically considered as cells or fibres, or (*c*) nerves, or (*d*) the vessels—blood or lymphatic.

By and by, it will no doubt be practicable to form a classification upon this basis—an anatomico-pathological one; but at present, observers have only approximately determined the primary seat of disease in a few cases. It has been the fashion to ascribe every disease of the skin to "some condition of the blood," but we now know that this is a very erroneous supposition, and for my own part I believe that the blood may be remarkably passive in regard of many cutaneous diseases. Familiar illustrations of skin eruptions due to blood alterations as their essential cause, are to be found in the eruptions of acute specific diseases, of syphilis, medicinal rashes, &c. But there is reason to think that more skin diseases than have been hitherto imagined originate in a misbehaviour or perverted action primarily of the tissues themselves, especially their cell elements. As for instance, epithelioma and its congener rodent ulcer, lupus, psoriasis very likely, as well as warty growths, keloid, fibroma, and so on. In psoriasis there is no evidence that the disease is the result of a special blood alteration, nor is the amount of cell change in any way necessarily related to the amount of hyperæmia, but rather the reverse oftentimes; and I see no difficulty in accounting for the disease by a perverted growth of the rete cells, originating as an independent phenomenon. This power of independent nutritive action is seen in the migrated cancer cell, in the growth of the piece of transplanted cuticle in skin grafting, in amœbiform changes in cells, &c.

It is to be observed however that those diseases which are not actually *originated*, are oftentimes very materially *influenced* and *modified* by blood alterations. The consideration, however, as to whether a disease originates in the tissues or the blood, or other part, bears directly on the treatment. If psoriasis, for instance, be a blood disease, the operation of our remedies must be directed against the blood condition. But if the disease originate in the tissues, our remedies must be mainly such as will tend to check the proliferation of the cell elements, and local applications will probably be the most important. As the knowledge of physic increases, this idea will be more clearly acted upon.

Already—to refer particularly to tissue life—the pathologist attaches importance to the part which the cell elements play in skin diseases. In the commonest affections, as eczema, zona, and the like, the researches of Virchow, Recklinghausen, Neumann, Derby, Auspitz, Biesiadecki, Köster, and others, have shown that the connective-tissue corpuscles primarily undergo great and peculiar changes. In the case of cancer, much is being done to clear up the nature of the cell changes, and no one can doubt that the disease begins in the tissues.

There is this distinction to be made here, viz.—that whereas in some of the more common diseases, as eczema, the cell changes are the result of nerve paresis, in others, as in cancer, there is no evidence that they are more than the result of alteration or perversion of the "directive agency" or "formative capacity," as physiologists term it, of the cells themselves. I confess that I incline to the view that in psoriasis, the primary change begins in the cells, in a misbehaviour of the cell elements themselves.

But further, diseases likewise originate in nerve-disorder, and such diseases constitute a very important and an increasing class.

The trophic nerves in some cases seem specailly affected, and in others the sympathetic or vaso-motor nerves. At present there exists only the promise of important results from research, for the physiologist aids the dermatologist but slightly in his endeavour to unravel the causes of cutaneous neuroses, since he has not as yet accurately determined the part which the cerebro-spinal nerves and the sympathetic respectively play in healthy nutrition. The nerves are unquestionably not only concerned in controlling the calibre of the vessels, contraction being induced by the cerebro-spinal, and dilatation by the operation of the sympathetic in negativing or restraining the action, or throwing into a state of rest the cerebro-spinal nerves—but lively cell proliferation and metamorphosis, according to the researches of Pflüger, Heidenhain, and others, may be induced by the irritation of the trunks of nerves, and certainly glandular secretion is increased thereby.

A good paper, touching this subject, was published by Dr. Rutherford, in one of the recent numbers of the *Journal of Anatomy*. He says, that "whatever be the action of the *visa fronte* in producing congestion of a part, the chief cause is the action of the tissues upon their vaso-inhibitory nerves, whereby the vessels are partially or completely paralysed;" an explanation that accounts for the coincident or secondary hyperæmia observed in connexion with diseases in which the alteration of the tissues themselves is primary, as in psoriasis for example, as I think. See also Dr. Meryon (*Proceed. Med. Chir. Soc.*, Jan. 14, 1870).

Now to apply these doctrines to the explanation of cutaneous changes and the determination of the primary anatomical seat of disease. Theoretically the trophic nerves, if there be such, may be disturbed, and as the result peculiar changes in the cell-elements of the skin occur; but these changes react upon the sympathetic ganglia through the sensory filaments with consequent vaso-motor changes; or an impression made on the skin by any kind of irritant may at once derange the ganglionic action through the agency of the sensory fibres, and cell and vaso-motor disturbances ensue. But on the other hand, the inhibitory action of the sympathetic may be excited, and then the consequence will be hyperæmia as a primary condition, to be followed by the consequences of hyperæmia under certain circumstances. I believe these are truths of very great importance and to be more decidedly recognised by dermatologists. If I did not think so, I would not allude to them.

It is important to note, however, that the evidence most recently derived from experimental section of the sympathetic nerve, seems to prove that something more than mere active or passive dilatation of the vessels is required to induce actual inflammation, that is to say, hyperæmia with new cell products; for it has been shown that an increased current of blood, with its concomitant phenomena of augmented heat, increased secretions, and more acute sensibility, may exist for months after section of the sympathetic, without proceeding to disease. If insufficient nourishment be present, then inflammatory changes occur, the increased activity of interstitial absorption leading to rapid disintegration of the several tissues, and destructive inflammation. Irritation of the nerve trunk or the ganglia, I may add, will probably excite inflammation as well after section of the nerve.

In vaso-motor disturbance of course hyperæmia is primary, and in trophic nerve mischief, if such exist, textural alteration comes first. But the two, tissue and vessel, may be simultaneously affected, no doubt. In pityriasis rubra for instance, it is likely that this is the case.

In some cases where hyperæmia of the skin following nerve paresis occurs, very frequently there is not a little coincident congestion of internal organs, due to a similar cause to that which operates to produce the hyperæmic skin. Lastly, congestion of the skin may arise by reflex action, as in the case of erythema of the face, due to gastric and uterine disorders.

So much for blood, tissue, and nerve. I must add a word about the lymphatic system, so far as that is concerned in the production of skin diseases. I do not now refer to inflammation of the lymphatics and its consequences, but the effect of an alteration in the supply of lymph to the tissues, be that produced how it may. Dr. Broadbent (*Journal of Anatomy and Physiology*, Nov. 1869) concludes that the lymphatics receive the spare nutrient material which is forced onwards by the continued exudation of fresh fluid from the capillaries, and finds its way along the vessels to the thoracic duct. The non-diffusible colloid matters which have traversed the delicate capillary membrane outwards under pressure, cannot return against pressure, and must remain in the intertextural spaces, which are no other than the commencing lymphatics. In the *Obstetrical Transactions*, some years since, I argued that this very explanation was the true one. I believe that hypertrophic growths of the fibro-cellular tissue may result from the non-removal or too abundant supply of lymph. The probability that the lymphatics may be primarily concerned in the production of certain skin affections must be borne in mind.

6th.—Special attention should be paid to the fact of the characters of an eruption being *permanent*, or *transient*, or *interchangeable*. The case of lichen planus may be taken to illustrate this point. In it the characteristic lesion is a red flattened papule covered by the minutest scales. This is the sole lesion present. The papule never changes into a pustule or a vesicle; but not so is it with the papule of eczema or variola. The tendency of a syphilitic papule is to become oftentimes a pustule or tubercle, which gives place to an ulcer, and so on. The eruption as a whole may be again *capricious*, appearing and disappearing suddenly, often in the course of a few minutes. This feature in itself is almost diagnostic of urticaria.

7th.—Those who are studying skin diseases should observe whether an eruption be *uniform* or *multiform* in character. Multiformity implies (*a*) the co-existence of two or more diseases, in which case there will be present the features of the two or more diseases commingled; or it implies (*b*) the existence (1) if the lesions be inflammatory—*i.e.*, if pustules or vesicles be present, of scabies, or (2) if the lesions be degenerative, if ulcers and suppurating tubercles, for example, be present, of syphilitic disease. The difference between the two main classes of cases, the complicated disease on the one hand and scabies and syphilitic on the other, being, that in the former there are no transitional stages observed, as in purpura urticans, pemphigus pruriginosus, impetigo and scabies; syphilis and scabies, &c.; whereas in the latter class, they are present as between the papules, vesicles, and pustules of scabies, or the papules, tubercles, pustules and ulcers of syphiloderma. As I have before indicated, the multiformity (which by the way might have been referred to under the head of diagnosis) as it exists in scabies and syphilitic eruptions—relates in each case to such different kinds of eruption, and the multiformity moreover in complicated or co-existent diseases is seen to be due to the commingling of such distinct lesions without transitional forms, that the character of multiformity becomes at once a very reliable guide in diagnosis; of course, other things help, as seat, development, &c., but multiformity is a good rough test of syphilis, scabies, or complicated diseases.

8th.—It is wise to note certain differences, not only as to the general nature and character of cutaneous diseases as they exist in the old and young, but also in reference to the same disease as it occurs in the old and young. The cutaneous diseases of childhood are essentially distinguished from those of the adult, in that they are uncomplicated by organic diseases of internal organs, and by those more complex and profound perversions of nutrition which arise from over-worked or badly used organs, such as gout, dyspepsia, free retention of excreta in the blood, rheumatism, and so on. They contrast with those in the old by the absence of coincident degenerative changes in the body, which are to be the lot of the man who passes the meridian of life. The cutaneous diseases of children are uncomplicated in this respect, and speaking generally, they are the result of the misuse of pabulum supplied to the body, or the direct consequence of improper diet. The case of eczema infantile may be taken as an example. But there is a difference in constitutional conditions—the diathetic conditions in the child who suffers from skin disease are different from those of the adult or aged. It does not take any long time in the out-patients' room to see how frequently the subjects of skin diseases in the young are strumous, and what an influence this diathesis has on the skin diseases of the young as contrasted with those of the middle-aged and of an age beyond the latter period of life: that syphilitic affections other than those hereditarily transmitted are specially the privilege of the adult, and so on: that in the advanced in years there are not only complicating organic diseases of internal organs, blood alterations due to mal-assimilation, degenerative tissue changes such as cancer, but disease speciallyconnected with decay of the nervous system, as in senile pruritus. But to put what I wish to enforce in a few words, I may say that as regards *kind*, the diseases of children are the result of mal-nutrition from deficient or bad feeding; those of the adult the result of mal-assimilation; those of the aged the result of degenerative changes. As regards complications, diseases of the young are often closely connected with the strumous diathesis especially; those of the adult with functional derangements of internal organs and mal-assimilation, such as dyspepsia, hepatic and renal torpor—and with the diathetic conditions, phthisis, rheumatism, and the commencement of gout; those of the aged are linked with nerve pareses and degenerations of the skin, as evidenced by increased pigmentation, atrophy of the glands, and of the nerves in the papillæ and also with organic diseases of important internal organs. All this is important therapeutically.

9th.—It is to be remembered that there is a difference in the conditions associated with skin diseases, as they occur in hospital and private practice. The constitution of the hospital patient is depraved by mal-hygiene and want of proper food, that of the private patient is depraved, no doubt by want of hygiene oftentimes, but also by overloading of the digestive organs, and not from actual want of food. But more than this; the nervous system participates in the latter much more actively in helping, controlling, or modifying the existing disease; and this as the result of the luxury enjoyed by the rich, and the greater mental toil undergone by the busy man of the middle classes, the effects of which, in both cases, are felt by the offspring. The old amongst the hospital patients show especially nervous symptoms connected with physical decay, and at the two extremes of life the evil consequences of uncleanliness are most marked, because there is less power to resist its influence—in the hospital patient.

10th.—There are differences in the same disease as seen in this and other countries, as well as a distinction to be drawn between the several kinds of cutaneous affections occurring in England and abroad. For instance, the lichen ruber of Hebra is rarely seen in England, and not only less frequently, but also not in such a marked form as in Vienna. Lupus in Vienna is, on the whole, a much more severe disease than in England. Again, the prurigo of Hebra does not occur in England, save as the greatest rarity. It would seem, too, that it is not the same severe disease here in external characters and behaviour. Parasitic sycosis is common in France, rare in England and Vienna. Psoriasis is infinitely more common in England than elsewhere, and urticaria in America, and so on. I lay much stress on the fact that differences in the same disease are seen here and abroad, and for this reason: That I wish it to be understood that the descriptions given by foreign writers of skin disease, whilst *in the main* they apply correctly to English skin diseases, yet vary in many important particulars, and unless the student realizes this fact, and many do not, he will be sure to be confused in his reading. Conversely the descriptions given by English authors will not represent accurately the characters of diseases as seen abroad. There is, indeed, a nationality of disease as well as of character or physique.

11th.—A very close relation exists in many instances between cutaneous disorders and functional disturbances in internal organs. In some instances hyperæmic changes in the skin and mucous membrane *have a common origin*, as in lichen planus and pityriasis rubra, from disturbance of the sympathetic for example, and this is the explanation of the coincidence in the two diseases named, of the skin changes, and pyrosis, menorrhagia, and the like. In other instances the changes in skin and internal organs, instead of having a common origin, react the one upon the other, and the important point to notice is this: that the cutaneous troubles may be excited and intensified by internal troubles. There are four organs whose derangement excites or intensifies skin mischiefs. The stomach, the liver, the kidney, and the uterus. In the vast majority of cases it is rather intensification than excitation that the practitioner has to deal with. I may add a few words as to details under this head. First as to the stomach: of course, if the stomach fails in its work the general health will suffer, and so the skin will be less able to resist disease or to undergo repair; but there is a more direct influence upon cutaneous diseases than this. My own belief is that wherever there is an excess of acid secretion, or where the secretion of gastric juice is altered from a healthy standard, there, probably from the circulation of acridities absorbed by the intestinal tract, cutaneous inflammations and hyperæmias are intensified, as in the case of certain of the simpler erythemas of children which are thereby produced. But again, stomach irritation, especially in subacute dyspepsia, is reflected to the skin, especially that of the face, and excites glandular or erythematous changes, as in acne and erythema of the face. The face flushes after meals where digestion is badly performed, and an exaggeration of this condition is observed in acne and erythema, in connexion with marked dyspepsia. Of course a predisposition to acne, with exposure and irritation of the face by externals, are elements in the cause of acne, but practically, if treatment removes the dyspepsia, the disease often goes. It is not difficult to see that if the face of the patient is predisposed to acne, dyspepsial troubles reflected to the face may actually excite or determine the occurrence of the acne. Pretty much the same may be said, *mutatis mutandis*, as regards uterine irritation in women. It is a matter of very common observation that uterine troubles aggravate erythema of the face, urticaria, and so on. Now as regards the liver. It is needless to give proof of the truth of the statement that "poisoned blood"—blood I mean charged with any effete products—when passing through an inflamed skin, say that of eczematous persons, or of an urticaria patient, will tend to still further derange the skin of that particular subject. And blood is often charged with bile products, and tends, as in urticaria and eczema, to intensify the inflammatory symptoms, and to retard the cure. This is often seen in children who have white stools and who suffer from eczema. In the connexion between phlegmonous or carbuncular inflammation and the diabetic habit, it is possible again to trace the influence of a disordered liver—supposing that to be the organ directly concerned in the production of sugar—on skin diseases. Lastly, as regards the kidney, there are two ways in which this organ may influence skin diseases; the first by the non-removal of watery fluid in proper quantities, whereby the occurrence of œdematous infiltration is favoured, as is often seen in eczema of the legs in the old; the second by non-excretion of nitrogenous matters, leading to impurification of the blood, and the circulation of urea, uric acid, and the like, in unusual quantities, through the inflamed or diseased skin, giving rise to increased hyperæmia. The latter happens in psoriasis, eczema, and other diseases. Of course organic diseases of stomach, liver, and kidney involve functional disturbances, and so far bring about modifications of skin diseases indirectly, as do purely functional disturbances of these organs. From what I have said, the reader will have no difficulty in understanding that skin diseases require to be regarded not only from a purely surgical point of view, as some are wont to assert, but also from that of the physician.

12th.—It is important always to be aware of the fact of the bias impressed upon skin diseases by various diatheses—especially the syphilitic, the gouty, the strumous, and the nervous. The modification of skin disease by the syphilitic poison (that is, the modification which skin diseases tend to and very frequently undergo in syphilized subjects,) is a most important fact, and one that, as far as I know, is not duly appreciated by any writer or teacher on the subject. Even actual syphilitic eruptions are badly depicted and described. I venture to say this much:—that whenever the student meets with an untypical eruption—and of course I assume that typical cases of disease are at once recognised—untypical either as regards its development, course, main features, or duration (save in cases that can be explained by abortive development), and in which there is especially a tendency to pigmentary deposit out of ordinary proportion to the tissue change, with a disposition to a diminution in the degree of mere surface alteration, discharge, or scaliness, but an unusual tendency to fibroid deposit, —suspicion of syphilis should be excited. (For instance, if an eczema instead of discharging becomes thickened and darkly pigmented, and this be not explained as the result of chronic congestion.) Further, if in addition there be an earthy aspect of face, semi-rheumatic pains, and a cachectic look, the history of the case should be carefully gone into, with a view to detect a syphilitic taint. Ulceration unaccounted for in infants or adults by bad feeding, the strumous diathesis, or cachexia is suspicious, and decidedly so is the presence of rupia-like crusts. I believe that the efficacy of so-called alterative doses of bichloride of mercury in chronic skin affections is really to be explained by the presence of a syphilitic taint in many cases. Next as to the strumous diathesis. Free pus production out of proportion to the degree of inflammatory action, or phlegmonoid inflammation or implication of the cellular tissues, are the features that occur as superadditions to skin affections in strumous subjects. These are pretty sure indications of the need of anti-strumous remedies under all circumstances, in conjunction with appropriate remedies for the eczema, the lupus, or whatever else may be present. The gouty diathesis is present in many persons suffering from eczema, psoriasis, lichen, prurigo, and so on. I have already indicated that the circulation of urea and uric acid in extra amounts in the blood, is likely to be followed by an intensification of hyperæmic and inflammatory conditions. It is usual to hear medical men talk of "gouty eczema," "gouty psoriasis," which are relieved greatly by the use of gouty remedies. Such cases were instances of eczema and psoriasis, &c., in gouty subjects, the gouty blood acting as an irritant to the diseased skin. This is the simple explanation. These remarks may suffice to show that certain and different constitutional tendencies impress upon skin diseases certain features, which in themselves are to be regarded as important therapeutic guides.

13th and last.—Observers should accustom themselves to examine microscopically the morbid products of skin diseases. The surgeon and the physician obtain most valuable indications from the examination of the minutest portions of morbid tissue and the juice it may yield; and the dermatologist is much to blame for an omission in this respect. The microscope affords very valuable assistance in the differential diagnosis of herpes, eczema, psoriasis, and tinea especially. For instance, inflammatory products are absent in psoriasis, present in the other three diseases; whilst in all forms of parasitic disease resembling herpes and eczema, as in so-called eczema marginatum, fungus elements are detected, provided proper care is observed—by this I mean that only the thinnest sections or portions of tissue are taken, and the tissues are rendered sufficiently transparent by potash.

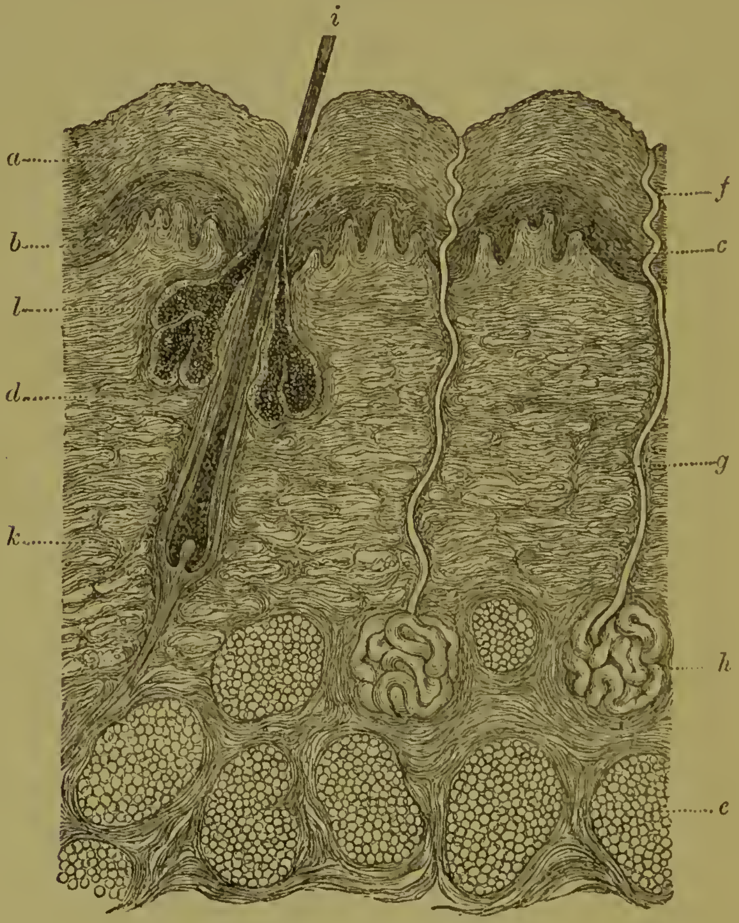
Summary.—And now to sum up what I have said as to the rules to be observed in studying skin diseases, I say it is necessary not to confound *stages* with *varieties* of disease, but to constitute varieties on the ground of differences in the general characters of *diseases as a whole*; to distinguish between accidentals and essentials, so as to recognise the proper nature of mere secondary complications and occurrences; to look upon mere surface alterations as indicative of, and dependent upon, changes in the deeper parts; to try and ascertain the primary seat of disease as regards nerve, blood, or tissue, for therapeutic reasons; to note if an eruption possesses characters which are permanent, transient, or varying from time time, as indicative, when transitory, of some excitation of the nerves, and when varying, of an inflammatory disease; to observe if an eruption be uniform or multiform, as suggesting in the one case when uniform that the disease is uncomplicated, or in the other case when multiform, complication by a second disease, or the existence of scabies or syphilis; to recognise the nationality of disease; not to be misled by the descriptions of foreign dermatologists, or to try to use them as absolutely true of the diseases of this country; to make allowance for the bad feeding of the lower and the high living of the upper classes in reference to treatment; to seek out association of functional and organic diseases of internal organs with the diseases of the adult and the aged; to remember, and act upon the relation between functional disorders of the stomach, liver, kidneys, and uterus, and certain skin complaints; and also the modifying power of diathesis. It is from such a liberal and enlarged point of view that I consider skin diseases should be studied.

CHAPTER II.

THE ANATOMY OF THE SKIN, AND ANATOMICAL CONSIDERATIONS.

In order to arrive at a correct understanding of the nature of the morbid changes that go on in the skin, and to comprehend correctly how and where these changes begin, the possession of accurate knowledge of the healthy skin in its different parts is essential. For pathologists are doing a great deal to define the particular structure and seat in which alterations in cutaneous

Fig. 1.



(After Neumann.)

Section of normal skin. *a.* Horny layer of epidermis. *b.* Rete Malpighii, or mucous layer of epidermis. *c.* Papillary layer. *d.* Areolar tissue of cutis, corium. *e.* Panniculus adiposus. *f.* Spiral excretory duct of sweat gland. *g.* Straight part of excretory duct of sweat gland. *h.* Convoluted extremity of sweat gland. *i.* Shaft of a fine hair. *k.* Root of hair. *l.* Sebaceous gland.

diseases commence. Besides, the healthy skin is of course the standard of comparison for all changes in the skin, and without the clearest perception of what that standard is, the student can of course only fall into error from the inability to distinguish between what is normal and what is abnormal.

I need not, as I have only a practical purpose in view, enter into any very elaborate detail with regard to the anatomy of the skin. I shall content myself with a general resumé of the anatomical structure of the parts to which the dermatologist's attention is specially directed as regards the origin of pathological processes.

In the following description of the structure of the skin I have followed Biesiadecki, the distinguished Professor of Cracow. His elaborate and clear exposition of the matter in an article in Stricker's Anatomy is now accessible to every English student, and will amply repay careful study on the part of those who desire to enter into more elaborate detail than I do here. Through the courtesy of Mr. Hutchinson I am enabled to illustrate the text with certain of Biesiadecki's own representations of the minute anatomy of the different parts of the skin. I have scarcely thought it worth while to describe the mode in which sections of the skin can be best made and prepared for the microscope.

The skin is made up of (*a*) epidermis or cuticle; (*b*) cutis, true skin, derma, or corium, as it has been severally named; (*c*) subcutaneous cellular tissue, together with appendages—viz., (*d*) hairs and hair follicles, (*e*) sweat glands, (*b*) sebaceous glands, and (*g*) nails; these are all supplied in varying degree with vessels, nerves, and lymphatics. The general arrangement of these several parts is shown in the accompanying figure 1.

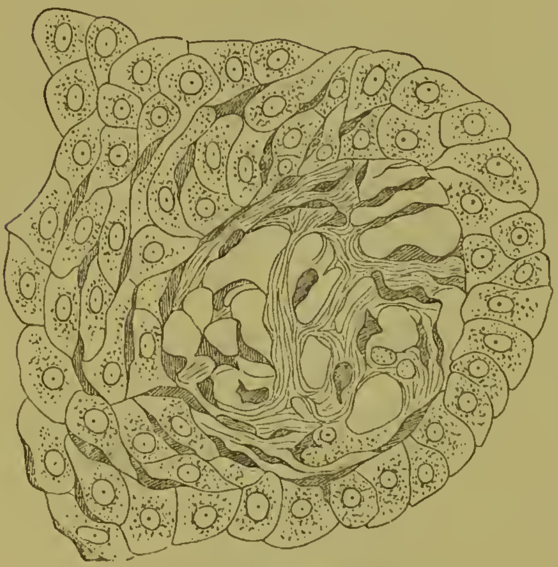
THE EPIDERMIS.

The epidermis or uppermost part of the skin is made up of two layers, the one the more superficial, called the *horny* (see *a*), the deeper called the mucous layer or the rete Malpighii (see *b*). Both layers are made up of epithelial cells which differ, however, each in certain particulars.

The *horny layer* appears, when casually examined under the microscope, to be made up of fine lines or fibres, which run parallel to the surface, but on manipulating these apparent fibres they are seen to consist of flattened-out or nucleated cells which have a polygonal shape, their close stratification giving the appearance of fibres. On tracing the cells downwards they are noted to become somewhat larger; they show an occasional distinct nucleus, whilst they are not so much flattened out as are those above. The cells of the uppermost or horny stratum vary in size from 0·125‴ to 0·02‴. They are not stained by carmine.

The *rete mucosum* or *Malpighian layer*,—the deeper of the two layers of the epidermis, lies upon the corium—and projections of this rete dip down between the elevations of the uppermost layer of the corium called papillæ (see *c*, fig. 1). The cells of the rete in immediate contact with the corium are very small, varying in size from ·0033‴ to ·004‴ they have a nucleus, and are regarded as showing a disposition to a columnar form, according to Biesiadecki, with their long axes directed perpendicularly to the corium surface beneath. Observers have noticed the difficulty of defining their cell walls. Biesiadecki* states that "they consist of a slightly granular refractile mass of protoplasm, destitute of cell membrane, surrounding, though in small quantities only, the compact nucleus." Above these lowest cells are larger more clearly defined ones, from ·002‴ to ·003‴—cubical in shape and with a nucleus containing two nucleoli. Farther upwards, towards—*i.e.*, nearest—the horny layer the cells get larger, more distinct, and contain well-defined nuclei. They become likewise more and more flattened. Some of the cells become stellate or ribbed, and then the minute hair-like processes given out by some of them are said to penetrate into adjoining cells. From the cells, however, of the upper layer the nuclei may fall out, and they then contain vacuolæ. But there are certain other and special cell elements — spindle - shaped corpuscles — described by Biesiadecki to be found in the rete of living persons, and these cells play an important part in disease. Biesiadecki† states that "they are most easily detected in the middle and upper layers of the cells forming the mucous layer, where they can be recognised by the refraction of their protoplasm and by their minute size. They are commonly elongated, appearing as if they had been compressed between two epithelial cells, or they give off fine processes that run between the several epithelial cells. Their protoplasm is highly refractible and becomes deeply stained by carmine, whilst the nucleus can only be recognised with difficulty. This is usually distinguishable, after being subjected to the imbibition of carmine. In the deepest cell rows of the mucous

FIG. 2.



(After Pagenstecher.)

Horizontal section of skin through a papilla. The migrating cells are observed as dark bands between the epithelial cells and amongst the connective tissue of the papilla.

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* Stricker's Histology, vol. i. † Loc. cit.

layer such cells are much more difficult to demonstrate, since they offer some points of similarity to the cells of which these are composed; for the cells of these layers possess a similar highly refractile protoplasm, become deeply stained with carmine, and only differ from the former by their well-defined nucleus. The spindle-shaped cells are most easily perceived in those cases in which one half is found between the cells of the mucous layer, whilst the other half is imbedded in the corium. These cells strongly remind one of the so-called migratory cells." The migratory cells are represented in fig. 2, after Pagenstecher, as multiplied in disease. Biesiadecki finds these spindle-shaped cells normally in the subcutaneous connective tissue, near the blood-vessels and between the fibrillæ of the corium, and in the mucous layer or rete. They increase largely in number in certain diseases, and it is thought that in health those in the rete have migrated from the corium. The pigment is contained in the cells of the rete.

Now in regarding the two (horny and mucous) layers of the cuticle or epidermis as a whole, there are certain points of importance to be aware of. In the first place, the horny layer varies much in thickness at different places from 1-65 to 1 line, but the mucous layer is fairly uniform in this respect, being generally from 1-65 to 1-20th of a line. The epidermis is thin about the face, and thickest on the sole of the foot and often the palm of the hand. It is believed that non-medullated nerve fibres run up into the rete or Malpighian layer, and there form a network.*

THE CORIUM.

The corium (see *d*, fig. 1) is an important part of the skin, and is made up of connective-tissue fibres and corpuscles, intermingled with elastic fibres, forming a closer plexus above and a looser one below, the whole being woven into a densish mass with smallish meshes. It has two parts—an upper or papillary layer, and a deeper part. The papillary part is composed of projections upwards, in the form of fringe-like processes, called papillæ (see *c*, fig. 1), which are projected into the rete above; the rete dipping down into the inter-papillary parts. The deeper part differs in the fact that the texture is somewhat more open than in the papillary part. There is no distinct line of demarcation between the two.

The papillæ in the papillary part vary in size and aspect in different parts of the skin. They are pointed or thread-like about the fingers, and club-shaped or rounded over the general surface of the body. On the palm of the hand, about the nipple, and the sole of the foot, they are longest and largest, being often ·66 to 1 m. They are shortest on the face. They are of two kinds—

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* See Langerhaus, Virch. Archiv, Band xliv. 2 and 3 Heft. Podcopaew, Arch. für Mikroscop. Anat.; Band v. Heft 4.

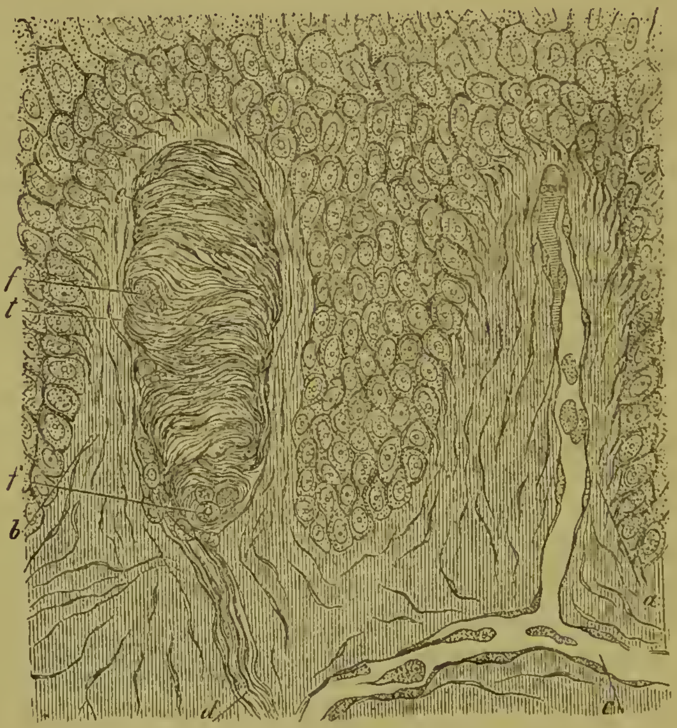
nervous, containing nerve fibres ending in tactile corpuscles, and vascular, containing blood-vessels in the form of a loop (see fig. 3, from Biesiadecki).

Some believe that the corium and rete are separated by a distinct membrane; but this is admitted by most to be true only as regards the fœtus, and not the adult. Biesiadecki and others affirm its presence, and that it is ribbed and projects fine fibres into the mucous layer.

There are, in addition, spindle-shaped cells, or cells anastomozing by processes, amongst the connective-tissue bundles in the substance of the corium and around the vessels.

It is said moreover that cells, supposed to be escaped blood-cells, are to be seen normally, outside the vessels in the corium.

Fig. 3.



(After Biesiadecki.)

Prepared in chromic acid. *a.* Vascular. *b.* Nervous papilla. *c.* blood-vessel. *d.* Medullated nerve fibre enclosed in a thick nucleated sheath. *e.* Tactile corpuscle. *f.* Transversely divided nerve fibres.

The thickness of the corium varies. It is thinnest about the eyelids and prepuce, being about ·56 m.; on the face, scrotum, and body generally, it is thicker. On the sole of the foot and palm of hand it is thickest, being from 2·25—2·28 of a millimetre (Krause).

The corium is well supplied with vessels, lymphatics, and nerves. The vessels come up from the connective tissue below, give off branches to the fat and the glands, then constitute a network which sends off more or less obliquely twigs to form a longitudinal plexus along the base of the papillæ, from whence finally capillary loops are supplied to most of the papillæ (see fig. 3, *c*.) The lymphatics have much the same arrangement as the blood-vessels. The plexuses however are situated beneath those formed by the capillaries, but no lymphatics are supplied to the papillæ. The spaces normally seen between the connective-tissue fibres are supposed to be lymphatic spaces; they have no proper boundaries. The blood-vessels and lymphatics are thought to communicate, though this has not been proved, by means of perivascular spaces where the blood-vessels and lymphatics run together, the walls of these spaces being formed by the connective tissue around.

Nerves accompany the blood-vessels coming up from below, and are of two kinds, medullated and non-medullated; the former go with the tactile and Pacinian corpuscles (see fig. 3, *d* and *f*), and the latter form, it is believed (Podcopaew*), a fine network below the rete, in connexion with the capillary plexus, and are in communication with those found in the rete. Non-medullated fibres also run with the capillaries, which supply the vascular papillæ.

The sebaceous glands are situated in the corium (see fig. 4, *t*).

THE SUBCUTANEOUS CELLULAR TISSUE.

This is nothing but a lax network of connective tissue. The bundles of fibres, "usually cylindrical, exhibit constrictions at various points like those of the arachnoid membrane, and consist of a number of sinuous fibres of connective tissue, between which lie numerous fusiform and connective-tissue corpuscles of various forms and dimensions" (Biesiadecki). It is this part in which the fat cells are collected in the meshes of the fibres, the only seats destitute of fat being the eyelids, penis, scrotum, and ears. The fat I need not describe. The fusiform cells that lie between the bundles and fibres of the connective tissue are connected with these fibres by means of processes given off one at either end, with other minor ones elsewhere. Other fusiform cells, without processes (the migrating cells), and small cells like blood-cells, are observed, the latter being contiguous to the vessels. Biesiadecki and others affirm that there are transitional phases of cells, between the round, and the fusiform ones with processes. There is no line of demarcation between the corium above and the subcutaneous tissue below.

THE HAIR FOLLICLE AND SEBACEOUS GLANDS.

(A.) HAIR FOLLICLE.

I take these structures together on account of their close anatomical relationship, for the sebaceous glands open into the upper part of the hair follicles.

The hair follicle consists of a deeply-seated part and an excretory duct, which is somewhat dilated. At the bottom of the deeply-seated part is a projection called the *papilla*, at which the hair cells are formed (see fig. 4). The hair follicles reach well down in the case of the larger ones into the subcutaneous cellular tissue (fig. 4).

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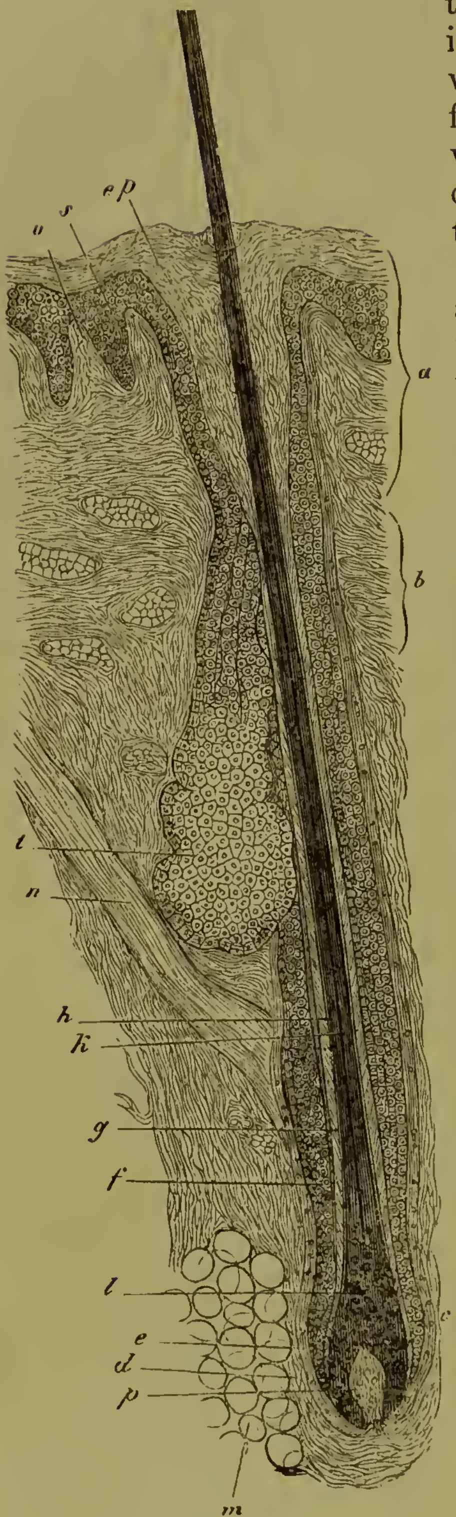
* Loc. cit.

The hair follicle may be regarded as a depression of the skin; the papilla at its blind end representing one of the ordinary papillæ of the skin.

The wall or sac of the hair is formed of connective tissue, representing the corium, and is supplied with vessels and nerves. I need not describe it. It has attached to it a bundle of muscular fibres—the anector pili (fig. 4, *n*). The papilla (*p*) is made up of connective tissue, but in which the cells predominate, and is supplied by small arteries that divide and join once and again; nerve fibres have been traced up to its neck. Between the hair and the true follicular wall are certain structures that ensheath the hair, and are called the outer and inner root sheath of the hair (see fig. 4, *f* & *g*). The *outer root* sheath is regarded as the inverted layer of the rete mucosum. It does not reach to the lower part of the bulb, but ends about the level of the apex of the papilla. It is made up of closely packed cells like those of the rete, the innermost (those nearest the hair) being flattened out more than those more externally placed, which are inclined to be columnar. The cells are several lines deep, except above and

Fig. 4.



(After Biesiadecki.)

Hair from beard *a*. Excretory duct. *b*. Neck of hair follicle. *d*. External sheath of *hair follicle*. *e*. Internal sheath of *hair follicle*. *f*. External root sheath of *hair*. *g*. Internal root sheath of *hair*. *h*. Cortical substance. *k*. Medulla of hair. *l*. Root of hair. *m*. Fat cells. *n*. Anector pili. *o*. Papillæ of skin. *p*. Papillæ of *hair*. *s*. Rete mucosum. *t*. Sebaceous gland. *ep*. Epidermis, which is continued into the follicle.

below where the sheath ends. The *inner* root sheath (see fig. 4, *g*) is held to be made up of two layers, the outer next the outer root sheath, is called the layer of Henle, and the inner layer next the hair—Huxley's layer. The former, or Henle's layer, has the character of fenestrated membrane—a membrane made up of long fusiform cells with spaces between them. Huxley's layer is produced as a special layer at the root of the hair. It consists at first of fusiform cells with nuclei, but the latter disappear above, where the layer is homogeneous. It is the union of these two layers (those of Henle and Huxley) that forms the inner root sheath; and it extends upwards to the neck of the follicle. But I fail to see that it does not continue upwards and blend with the epidermic structures, indeed the inner root sheath, represents the horny layer of the epidermis, as does the outer root sheath the rete.

I do not think it necessary to give a detailed description of the hair.

SEBACEOUS GLANDS.

These appendages are in close connexion with the hair follicle, as before stated, and they are seated in the corium: their ducts open into the hair follicle at the neck in the case of the larger hair follicles; but in the case of the smaller, or downy hairs, the relative position of the glands and hair follicle is altered, so that the minute hair follicle leads into the duct of the sebaceous gland, which opens directly on the surface. These glands are absent from the palm of the hand, the sole of the foot, and the dorsum of the third phalanges of the fingers and toes, and there are few about the penis. The largest are found about the nose, scrotum, anus, and labia.

The glands are composed of excretory ducts, continuous above with the hair follicle and of true gland structure (see fig. 4). The gland structure may take the form of a single sac, or be made up of from two to twenty lobules or acini that open into the excretory duct. The gland wall itself is made up of "a transparent and colourless nucleated membrane that is apparently destitute of structure, but when treated with nitrate of silver exhibits groups of cells; externally it is bounded by a dense layer of connective tissue with elastic fibres, which is traversed by a moderately close vascular plexus. The sebaceous follicles are not known to possess any special supply of either lymphatics or nerves" (Biesiadecki). The glands are filled with cells which may be regarded as the representatives of the rete Malpighii—at least, all the cells are like epithelial cells, but the cells at the outer part of the glands are exactly like those of the rete, save that they possess more decided nuclei. All the cells tend to undergo fatty change. The glands are formed in the fœtus originally as offshoots from the outer root sheath of the hair follicle.

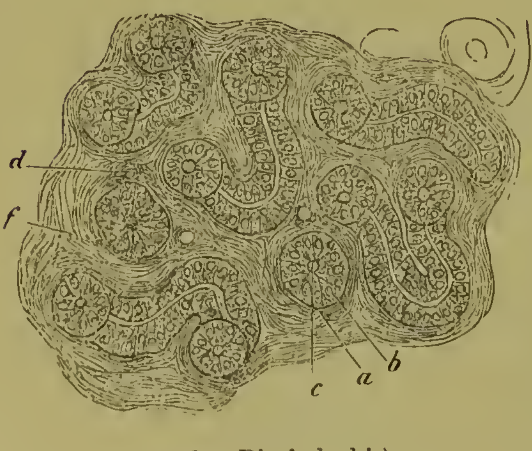
THE SWEAT GLANDS.

These glands (see fig. 1, *f* and *h*) lie more deeply than the sebaceous, for they reach to the lower part of the corium or the subcutaneous tissue, and lie among the fat cells, forming coils (see fig. 5). The excretory duct runs up through the corium, enters the rete between the papillæ, then passes up in a spiral direction through the epidermis to the surface. The openings are large, funnel-shaped, very plainly seen, and in regular disposition in the hands and feet, but in other places the openings are in groups of two or three, and irregularly placed. The wall of the duct is formed below by the corium, and the duct is lined by epithelial cells, but in the rete mucosum and above there is no true wall, the boundary being formed by the epidermic cells. The gland itself has a diameter of from ·15 to ·5 of a millimetre. In the axilla it may be as large as from 1 to 5 millimetres. It is made up of the membranous duct very freely coiled, the coils being held together by connective tissue, and the ending of the coil being in the centre of the gland. Vessels form a network about the gland and in the connective tissue that surrounds it, which latter contains spindle-shaped cells. The contents of the gland may be regarded as a single layer of polygonal cells.

MUSCLES OF THE SKIN.

There appear to be two kinds of muscles found in the skin—the voluntary, or striated, and the involuntary. The former are to be detected in the face, beard, and nose, according to Biesiadecki, "ascending sometimes obliquely, sometimes vertically, between the hairs and the sebaceous follicles to terminate in the corium." They come from below. The organic or non-striated muscles are more abundant. They occur forming a kind of network in the scrotum. Over the general surface of the skin bands of fibres are detected in connexion with the hair follicle, and are called *arrectores pili* (see fig. 4). These muscles exist as single fasciculi ·045 to ·22 of a millimetre, sometimes on one, sometimes on both sides of the hair follicle, in immediate relation to the sebaceous glands, which they enclose more or less. They run from the corium above

Fig. 5.



(After Biesiadecki.)

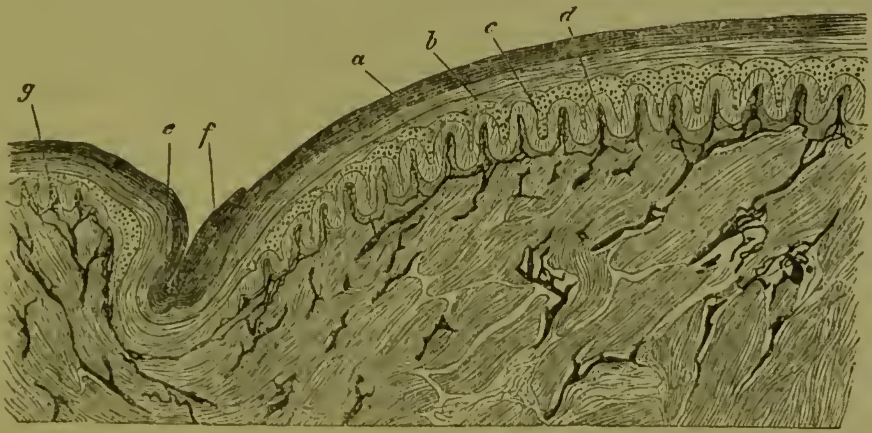
Coils of gland divided transversely. *a.* Sheath of gland. *b.* Enchyma cells. *c.* Gland tube. *d.* Divided blood-vessel. *e, f.* Connective tissue forming capsule.

to the part of the hair follicle just below the glands, and there end in the inner sheath of the hair follicle. Some authors affirm that bundles go down to the subcutaneous tissue and send off vertical and horizontal branches. Neumann, who is of this opinion, states that bands run above and under the sweat glands, more especially in the axilla. He describes also independent bundles of muscle in the corium quite unconnected with the hair follicles.

NAILS.

The nails, and the part upon which they lie, are essentially the same in structure as the skin in its different parts, only that the horny layer is more developed, forming the actual nail. Posteriorly, the nail is fitted into a groove; the part fitting into the recess is called the *root*, and the portion underlying the nail is that which represents the corium—it is, in fact, the corium; it bears, however, the name of *matrix*. Between the nail itself and the matrix is the *rete mucosum;* in fact the bed of the nail may be described as consisting of corium with the sub-connective tissue beneath, and the rete above.

FIG. 6.



(After Biesiadecki.)

a. Nail. *b.* Loose horny layer beneath it. *c.* Mucous layer. *d.* Transversely divided nail ridges (papillæ) with injected vessels. *e.* Nail fold deprived of papillæ. *f.* Horny layer of nail fold which has been deposited on the nail. *g.* Papilla of skin of back of hand.

As in the case of the skin the rete dips down between the papillary projections of the corium of the nail.

The corium itself, or matrix, is divided into two parts, which are separated by a more or less convex line seen through the nail and known as the *lunula*. The hindermost of these two divisions has its papillæ directed forward, less distinct, and more closely seated together. The front portion is thrown into longitudinal folds, and upon these are seated the papillæ. These folds are produced by the peculiar disposition of bundles of connective tissue in the structures beneath. The matrix towards the front part of the nail is covered by cells that are more and more horny, whereas over the posterior surface of the matrix (the root of the nail), these cells are softer. In fact, the part of the nail matrix behind the lunula is the spot where the nail is formed. The soft cells are directed forward, guided by the fold of the skin over the nail at its root—which fold lacks glands, and papillæ on the surface applied to the nail—becoming more horny as they advance. The posterior portion of the matrix is compared by Biesiadecki to the papilla of the hair, and the fold of skin over the root to the hair follicule. The structure of the nail is well represented in fig. 6.

GENERAL REMARKS IN RELATION TO HISTOLOGICAL CHANGES.

A correct knowledge of the anatomy of the skin is an immense aid to the right comprehension of morbid changes going on in the skin. Of course, in discussing the general pathology of the skin and the morbid anatomy of particular diseases I shall indicate the seat, mode of origin, and character of diseased processes; but there are certain general considerations relating to these processes that may very fitly be referred to in this place.

The *epithelial* stratum of the skin, made up of the horny and mucous (rete Malpighii) layers, are the special seat of a number of morbid processes. In parenchymatous inflammation as in small-pox, the first stage seems to be a great increase in the cells of the rete, and the pustule subsequently produced is formed bodily in the rete, its walls being formed by altered rete cells, stretched into fibres and enclosing pus cells. In the formation of vesicles and bullæ, the rete is chiefly concerned. In some cases of non-inflammatory diseases, the epidermic cells are found to have undergone special changes, or to have been arrested in their development, as in psoriasis.

The relation of the epidermis to the papillary layer, in regard to diseased action is a matter of no little importance. In a most excellent contribution to the subject, Dr. Auspitz* argues that it is not a correct view, as generally held, that the papillary layer grows actively as it were with the epidermic layer, the latter remaining passive, and receiving the impressions of the growing papillæ from below. He thinks that the reverse is really true, that the papillæ are the result of the growth inwards of the rete mucosum into the corium, in the form of columnar masses of its component cells. In order to illustrate what he means I may refer to his conclusions in regard to the production of diseases from the growth inwards of and resultant changes in the papillary layer. They are :—

1. In hyperæmic and inflammatory processes occurring in the skin, the

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* Ueber das Verhältniss der Oberhaut zur Papillarschicht insbesondere bei pathologischen Zuständer der Haut. Von Dr. Auspitz, Archiv für Derm. und Syph. 1870-1.

papillæ are found to be only succulent and slightly swollen; but no modifications of form occur, unless consecutive to secondary changes in the Malpighian stratum. 2. In simple and lymphatic hypertrophy of the connective-tissue matrix, as well as in cell-infiltrations of the corium, the same law holds. 3. In the keratoses, or horn-producing affections—ichthyosis—there is either no change in the form or size of the papillæ, or it is due only to the pressure of the hypertrophied horny layer. The prismatic and columnar forms of the latter are by no means dependent on the papillæ of the cutis. 4. The papillomata (warts, condylomata, epithelioma) originate essentially in an active neoplastic process taking place in the rete, which penetrates to a greater or less extent into the likewise hypertrophied connective-tissue matrix of the corium. The papillæ of the cutis here, too, perform only a passive rôle, their elongation and dendritic form being occasioned by the hypertrophy of the epidermis; whilst the elevation of the surface of the skin is due to hypertrophy of both. 5. An out-growth of the connective tissue of the skin sometimes occurs, but is never dependent on the pre-existent papillæ. 6. There is no essential anatomical difference between the several forms of papillomata, warts, pointed condylomata, and cauliform excrescences. The syphilitic condyloma differs from these only through the specific cell-infiltration of the corium. 7. Epithelioma represents exquisitely the types of the hypertrophic growth inwards of the epidermis into the connective-tissue matrix.—(See fig. 52.)

I will only remark here that a modified explanation may be given of the penetration inwards of the rete cells. It may be argued that if the rete and the papillary layer simultaneously augment, or even the latter increases by itself, the rete masses must be left more deeply placed from the surface; and if they continue to grow, as in epithelial cancers for example, it may seem as though the extension inwards was due *solely* to an actual growth inwards of the rete, and an elevation of the papilla secondarily. But the question is one for accurate observation, and anything that Dr. Auspitz states deserves the most attentive consideration. The rete is an important pathological ground moreover, from the fact that in most inflammatory processes there is to be found in it a great increase of the spindle-shaped or migrating corpuscles. Lastly, it is now established that cutaneous cancers originate in a morbid change in the cells of the Malpighian layer, and by the disordered growth of these same cells in masses from their inter-papillary parts, into the corium. This is an undoubted fact, and gives countenance to Dr. Auspitz's view above referred to.

The *corium* is also the seat of very important pathological changes that originate in its substance and various alterations of its component elements. It is the essential seat, of course, of hyperæmic changes: and according as the longitudinal plexus, or the papillary vascular loops, or both are implicated, the redness varies in aspect. The corium is, further, especially its papillary layer, the early seat of many inflammatory changes, the vessels dilating, and permitting moreover the escape of white blood cells into the corial textures, and likewise serum, which makes its way to the rete, forming vesicles, &c. Then again, the fibrous elements of the corium furnish the migrating or fusiform cells that appear in great numbers in chronic inflammations especially, and migrate to the rete. The corium is the chief seat, moreover, of neoplasmata other than cancerous, as in the case of syphilis and leprosy;

these new growths, supposedly originating from the connective-tissue elements. A simple increase of the latter, too, is held to constitute certain other diseases, such as pachydermia, keloid, &c. The vacuolæ and lymphatic spaces are also seats of particular changes, as in leprosy. A knowledge of the structure and peculiarities of hair follicles and sebaceous glands is not less important in relation to the origin of many common diseases, as acne, fibroma, cancer, lichen planus. Without it the student will attain little real knowledge of the pathology and therapeutics of these frequently-occurring affections.

In the case of the nail, unless a student knew what was the part of the matrix at which the nail was actually formed, he would be at a loss to diagnose a syphilitic from a non-syphilitic growth, or to comprehend the difference which arises when inflammation attacks now the posterior part of the matrix (where the nail is formed), or now the anterior portion; nor would be able to explain the predilection of parasites for the root of the nail.

I hope that even these few comments will show how necessary it is for the dermatologist to possess an accurate and detailed know ledge of the structure of the skin in all its parts.

CHAPTER III.

GENERAL PATHOLOGY OF THE SKIN.—ELEMENTARY LESIONS.

The next subject is the nature and varieties of what are termed "elementary lesions," or the types of form and aspect resulting from morbid changes in the skin. The elementary lesions, or external forms, if the term be better liked, consist of maculæ or stains; erythema or redness; wheals; papules, or "pimples;" squamæ or scales; vesicles, or little bladders; blebs, or large vesicles; pustules, or mattery heads; and tubercula, or lumps—eight in all. These are followed by certain secondary changes, viz.:—excoriations, crusts, stainings, ulcerations, scars, fissures, and so on.

There is one remark I would make with a view of helping the reader to avoid a common error in regard to these lesions. It is this, that the different typical forms of lesions embrace or include each of them several varieties, and the designation of each typical form or lesion is to be regarded as a generic term, applicable to several varieties of the same lesion. It is not enough, for instance, to say a papule is present. Since there are various kinds of papules, it is necessary to state what particular kind of pustule is meant. When it is said a tubercle is present, the class to which the lesion belongs has only been defined; the tubercle may be that of cancer, lupus, or syphilis. I am quite convinced that one of the commonest errors into which those who are studying skin diseases fall is the neglect to recognise the fact that there *are* several different varieties of the same kind of elementary lesions, and their confusion of these several different varieties. This is emphatically the case with papules. With this caution I proceed to point out the several varieties of elementary lesions.

MACULÆ.

Maculæ, or Stains (discolorations of the skin) are of various kinds; excluding hæmorrhagic stains, as in purpura, there are three different kinds of maculæ—(*pigmentary, parasitic, and chemical.*) So that whenever a discoloration of the skin, which is not explained by the escape of blood from vessels is met with, the observer has to decide to which of these classes it belongs, and the decision is an easy one. The staining by iodine, nitrate of silver, either taken internally for a long time or applied externally, and the yellow discolorations induced by bile staining are at once diagnosed; and there is no difficulty as regards the discoloration of the parasitic disease—tinea, or pityriasis versicolor, which is chiefly due to the presence of the fungus elements. In this disease, scales can be scraped away with the finger from the discoloured patch, which is moreover slightly raised and itchy, none of which features belong to pigmentary stainings. The pigmentary discolorations are the most numerous, and will be dealt with in detail in Chapter XIX.

ERYTHEMA.

Erythema, or simply *redness*, or if it be preferred, *hyperæmia*, is engorgement of the capillary plexuses of the skin. This condition may constitute—though caused by different exciting agencies—the chief and perhaps sole disease present, or it may form merely a part, and that a mere secondary one, in many diseases. Dermatologists make the usual division of congestion into active and passive. Passive congestion is the result usually of mechanical impediment to the venous circulation, and is of a dull colour and bluish, the surface being cold. Active congestion, well marked, is characterized by half a dozen signs :—(*a*) redness, which may be uniform, or punctate or blotchy, according to the extent of the capillary plexus involved ; (*b*) swelling, the result of the increased amount of blood in the part, and effusion from the vessels ; (*c*) a rise in temperature ; (*d*) disordered sensation, ex. gr. : tingling, itching, pain ; (*e*) an acute course as the rule, and (*f*) its being followed by secondary changes—ex., desquamation, exudation, and hypertrophy. Now of course hyperæmia or erythema is an item in most skin diseases, in all inflammatory diseases especially, but in a few it is the primary and the sole condition, and does not play only a very secondary part in the real disease. It is to such a condition that the term erythema is applied in its more limited sense, and it is produced *firstly* by a number of local cases—all irritants in fact ; and *secondly* in connexion with slight derangements of the constitutional condition, involving assimilative errors or febrile disturbance. The erythema and its direct consequences are all that is present, and these occurrences seem to be connected, as I have said, with some mild febrile general disturbance, as in erythema multiforme, roseola, and rosalia. These differ from the exanthemata in not running so definite a course, in not being contagious or dependent upon the action of specific poisons, as far as can be determined. All this is very simple. In looking at hyperæmia from a wider point of view, it has been usual to say that erythemata (hyperæmiæ) may be grouped into three classes :—(1) Those forms which constitute the sole disease, as in local hyperæmia, produced by local causes—ex., irritants of all kinds, and heat. (2) Those which form the main feature in general disorders, and are so important as really to constitute the disease that requires treatment—ex., the ordinary febrile erythemata ;

and here the rash is more or less partial. (3) Those which constitute a prominent feature in more serious and fatal affections—ex., measles, scarlatina, the acute specific diseases, and in which the rash is general over the skin. In some of these cases true inflammation—viz., hyperæmia, followed by the formation of new products, succeeds.

WHEALS.

Under this head I may refer to the nature of *wheals* or pomphi. These are elevated hyperæmic swellings, which in their fully developed condition have a pale whitish centre, and are typically portrayed in the sting of the nettle. Their chief characteristic is the suddenness with which they are developed, and the equal rapidity with which they disappear. There is sudden dilatation of a bunch of vessels, accompanied by heat and itching, then a certain amount of effusion of serosity; the vessels recover their tonicity, the fluid is absorbed, and all appearance of change vanishes. I expect that although the vessels in the actual hyperæmic spot are dilated, yet at the circumference the arteries are contracted, and it is the relaxation of this contraction which soon occurs that explains the rapid subsidence of the hyperæmia. It has been held that wheals are due to contraction of the muscular fibres of the skin, and on the ground that if two scratches be made, these are at once succeeded by red lines, immediately developed in urticaria, in the seat of the scratches, which lines approximate; but it is easy to see another explanation of the approximation. The effect of the alteration in the relation of the parts brought about by the effusion of fluid, as in the elevation of the central part of a wheal, must be to approximate the parts on either side in the transverse diameter. This may be seen by pinching up into a cone the side of an india-rubber ball.

The white aspect of the centre of the wheal is produced by the pressing out of the blood, away from the part of the skin, where the pressure of the effused fluid is greatest—that is, in the central part. If the finger be placed upon a large red spot, and pressure be made in its centre, the blood is squeezed of course therefrom, and the part gets pale for the moment. Now it is only necessary to suppose that pressure is made from within outwards, to form a correct idea of what happens in the formation of a wheal. The rapidly effused fluid causes the central reddened part to become more and more tense, till at last the blood in the central part is pressed away and the part looks pale. The swelling of the wheal as a whole is of course greatest at the time the centre whitens, and it is at this time that it feels most tense. As the effusion begins to disappear, the tension in the centre of the wheal lessens, and the blood gradually returns to fill the capillaries, whilst the red colour reappears. This physical explanation at once accounts for the whitish appearance seen in the central part of a wheal. Generally speaking, the effusion rapidly subsides, but it may be so persistent or so extreme that little bullæ are formed. This is not at all common however in nettle-rash (urticaria).

In children the hyperæmia is followed by the deposit of a certain amount of lymph, and wheals in children mostly leave behind minute fleshy (lymph) papules. This sequence is characteristic with lichen urticatus.

PAPULÆ.

Papules.—They are simply pimples.

It is emphatically in regard to papules that it is necessary to remember that each type of elementary lesion includes or has reference to several varieties. It is wonderful with what pertinacity students decline to go a step farther than the diagnosis of a papule in the rough, if I may so say. Having found a papule —a pimple—that contents them. They somehow have a horror of recognising the fact that there are many kinds of papules; and having determined that a papule is present, it is necessary to go farther and define its exact origin and character. Now there are just half a dozen kinds of papulæ or pimples, (1) those produced by hyperæmia of the papillæ of the skin, forming little bright red, minute points, as in the erythemata; (2) those formed by turgescence and consequent erection of the follicles of the skin, the perspiratory or pilous—there is hyperæmia alone here, as one sees about patches of eczema; (3) papules formed by the deposition of lymph or the like in the walls and about the follicles, as for instance in lichen planus, lichen pilaris; (4) papules formed by solid lymph formations in the actual derma, especially its papillary layer, as in prurigo—I do not mean phthiriasis:—or by new cell-growths as in syphilis; (5) papules formed by collections of epithelial or sebaceous matter within the follicles and the projection of these collections, as in pityriasis pilaris and lichen scrophulosorum; (6) papules formed by hypertrophy of normal structures—ex., the papillæ of the derma, forming small warts or minute fibrous outgrowths. The term papule should be really applied to the pale flesh-coloured pimples, formed by solid lymph, or in prurigo, and the dark ones of lichen planus. But I may profitably add a few words in detail under the several heads.

Hyperæmic papillæ, soft, red and small, speak for themselves.

Turgescent and erected follicles are frequently present, as small red papulæ, in many different skin diseases, where there is much irritation or scratching. So they occur in scabies, in phthiriasis, around patches of irritable eczema, and running on to the pustular stage, in croton-oil eruption, and so on. The hair follicles are the seat of papules under these circumstances, but the perspiratory follicles are those which are involved in lichen tropicus or prickly heat and in strophulus, as I believe. I am in the habit of drawing a distinction between these same kind of papules—viz., those formed by turgescent follicles and the early condition of vesicles (and pustules). The confusion of the two is often made in eczema, for instance. It will be seen presently that in eczema one of the first things that occurs is serous effusion into the papillary layer of the skin, and before sufficient time has elapsed for a vesicle to be formed by the effusion of abundant serosity, a papule is present. So in variola, before pus-cells are formed in the rete, so as to come to the surface, a papular elevation is produced. But—and this is the point—these papulæ, which are the transitional stages of other lesions, cannot—should not, rather—be confounded with papules formed by erected and congested follicles. For example, in eczema the two kinds of papules will oftentimes be found together, and each kind implies different things—one, the papule which is running on to become the vesicle, indicates the real and active disease; and the other, the congested and erected follicle papule, that there is a good deal of disturbance of the parts around the real eczema; and it indicates the need of soothing treatment. These remarks may teach another lesson of some moment—that it is not only important to discern the differences in the naked-eye characters of papulæ, but also their intimate pathologies. I said in regard of diseases in general, that it is wrong to divorce stages one from the other, and make them separate entities. So in regard to elementary lesions. The vesico-pustule of eczema or the pustule of variola has each its papular stage, which has peculiarities of its own, and which should be described and taken in connexion with the eruptive manifestation as a whole. To those papules that becomes pustules or vesicles I would use the term the papular stage of this or that, and restrict the term papule in the abstract to pimples that begin as and remain papules during their entire course.

The third kind of papule is that formed by deposit of lymph or cell growth about the follicular wall, as in syphilitic lichen, for instance, where the follicles generally of the body are involved. This state may be the consequence of hyperæmia. It may be very limited, in which case lichen pilaris results, or it may lead to a special alteration of the deep structures of the follicles. In the former case it is the superficial part which is affected, and the papules are small; in the latter, it is the deeper part, and the papules are larger as in lichen planus.

But I pass on to notice the fourth kind of papule—that formed, by effusion of lymph into or new growth in the derma. This is seen in lichen simplex—a very uncommon disease, in prurigo and neoplasmata. In this there is, as proved by microscopic examination, effusion of lymph into the papillæ, or new production of tissue, forming new solid formations, the size of from pin-heads to split peas. Lymph papules itch and are scratched; at first they are pale, firm, hard, knotty-feeling little lumps, but from being scratched exhibit excoriated apices, which are discoloured by dried blood—

the typical condition of a so-called pruriginous papule. Any papule that itches and has a central speck of dried blood is said to be "pruriginous." But all kinds of pimples, as congested follicles, new formations, and so on, usually itch; they are then scratched and hence may become "pruriginous," as in scabies, eczema, phthiriasis. When therefore it is said a papule is pruriginous it is necessary still to define the nature of the papule before making a correct diagnosis.

I should say that large and flat papular elevations occur in pruritus followed by scratching. They are produced by enlargement (œdema) of the little areas of the skin enclosed by the natural furrows.

In syphilis small solid papules of a pale or fleshy colour are formed. These may be "follicular," and then form as a consequence of hyperæmia of the follicles. They are mostly formed by little masses of granulation tissue in the true skin. They frequently pustulate or enlarge into tubercles. This tendency to interchange of character between several varieties of elementary lesions, is a characteristic of syphilitic eruptions.

The fifth kind of papule, that formed by collections of epithelial matter within the follicles, explains itself; the little plugs can be removed and are seen to be made up of epithelial matter. Mistakes in diagnosis are likely to occur when hyperæmia of the follicle is present, and the papules look reddish. I need say nothing of the sixth kind of papule.

VESICLES AND BULLÆ.

Vesicles and Bullæ.—It is usual to describe a vesicle as a minute, and a bulla, as a larger, bladder produced by the upraising of the cuticle by fluid, but it is necessary that I should be much more definite than this.

Vesicles vary somewhat as to their structure, their anatomical seat, and the source and character of their contents. The simplest kind of vesicle is that which occurs in sudamina and miliaria (see fig. 91). It is formed by a collection of sweat between *the horny layers* of the epidermis, and in a single compartment, as shown by my friend Dr. Haight,* of New York, who has recently investigated the subject of the structure of vesicles with great success. The roof and floor of the vesicles in sudamina are formed by layers of the horny epidermic cells, not colouring in carmine, and into the vesicle, which is not chambered, opens a sweat duct, the epithelium of which is clouded and swollen, and no doubt blocks up the winding duct near the outlet. In pemphigus there is a collection of fluid, not between the horny layer of the epidermis, but between the horny and the mucous, or Malpighian or rete layer; the cells of the lower strata being drawn out, and having fine cavities between them, produced by the effused fluid, but not so as to destroy the single character of the main chamber containing the fluid, the papillæ of the corium being likewise swollen with serum.

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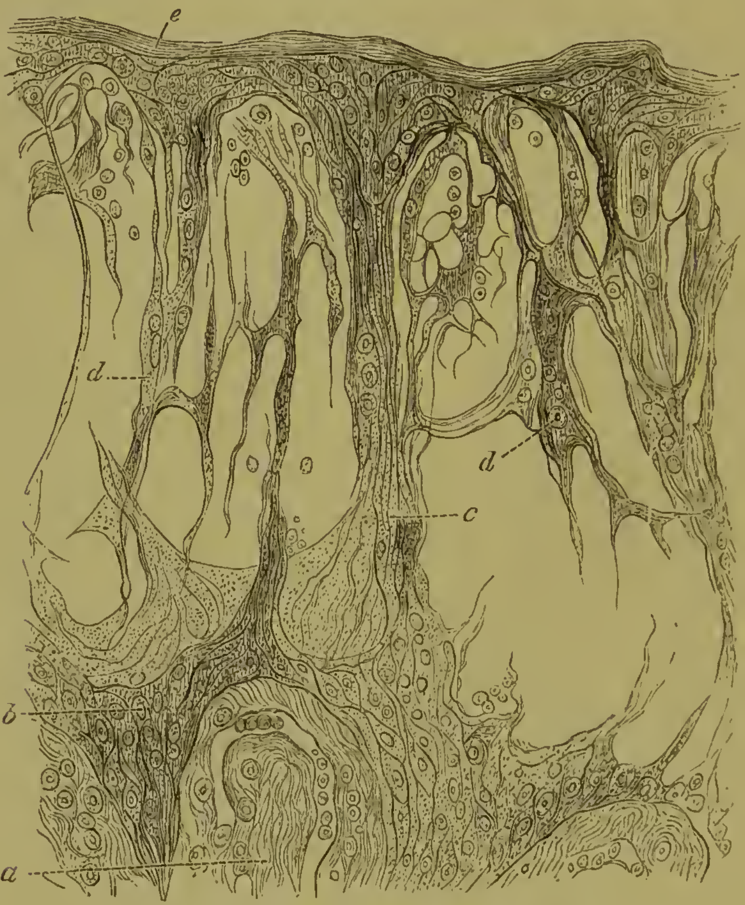
* Sitzungsberichte der Akademie in Wien, 1868, Band lvii.

In the formation of a blister, as for example in the case of a burn, Biesiadecki's observations go to show, that the vessels of the papillæ dilate in the first place, and give out much serous fluid; this fluid permeates the tissues and reaches the rete mucosum or Malpighian layer. The cells of the rete do not seem to be able to imbibe the fluid, and are pushed forward by the fluid. Adhering in part below, and being thus put upon the stretch they elongate, and are finally converted into fibres, in which no trace of nucleus can be seen. The epidermis is thus raised from the papillæ, but there are fine fibres (the stretched cells of the rete) running from below upwards in the cavity of the blister (see fig. 7). These fibres are torn across and hang loose in the cavity, in proportion as the effusion is great. But there is one part where the epidermis is not disturbed or detached, and that is, as may be well imagined, in the hollows between the papillæ. The fluid does not force its way to the surface here. Now, this description of a blister will help the reader to comprehend the nature of the vesicles and bullæ formed in disease. Much the same changes are observed in their formation as in that of a blister, above noticed.

So much for vesicles formed by serous fluid only, but now I have to speak of those in which inflammatory corpuscles appear and play an important part in connexion with the development of bullæ and vesicles. For example, in small-pox there is at first a great increase in the size of the cells of the rete Malpighii, with enlargement of the vesicles in the papillæ, and subsequently the presence of round cells about the vessels, and in the tissue of the papillæ—this constitutes the *papular stage.* When the vesicle forms, "a layer of elongated cells is observed beneath the epidermis (horny layer), and these pass without interruption into the obviously swollen cells of the rete Malpighii. Under this layer is a network inclosing serum, which is situated nearer the epidermis (horny layer) than the corium, and forms the proper vesicle. This network is formed by the stretched-out cells of the rete, and it incloses the pus cells." The vesicle is therefore chambered into lacunæ, and not solitary, each lacuna containing perhaps 8 or 10 pus cells (see fig. 8). A number of round cells are beneath, and press upon and flatten down the papillæ. In the pustular stage the pus and round cells increase largely. So that in the small-pox vesicle, the disease begins as a parenchymatous inflammation of the rete mucosum itself, and the pus probably comes from the spindle-shaped cells of the rete. The divisions of the vesicle are in its upper parts, and formed by the cells of the upper layer of the cuticle. There is some difference of opinion about the bulla of erysipelas. Some say that the corium and subcutaneous tissues are mainly affected and infiltrated with inflammation corpuscles, and no doubt that is true, but the epidermis and rete Malpighii are concerned in the formation of bullæ when they form. Dr. Haight affirms that between the corium and the horny layer (see fig. 7) is a network of fibres produced by the elongated cells of the rete, forming loculi enclosing fluid and exudation cells, which latter are also found, as others state, in the deeper parts. But there are other vesicles—those of eczema and herpes (see under heads of those diseases for illustrations) in which other features are found. The changes in these seem *to begin in the papillary layer* itself, and then spread to the rete and epidermis; whilst the vesicle is chambered, and not simple. In zona and eczema the papillæ seem at first to be increased in bulk by serous exudation into them and the formation of exudation corpuscles. The fusiform cells of the cutis, according to some, increase in number, spread through the rete and the papillary layer, and branch and form a complete network, in the meshes of which pus cells appear, and thrust aside the normal epithelial cells. Dr.

Fig. 7.



(Bulla of erysipelas, after Haight.)

a. Dilated papilla with vascular coils. *b.* Rete Malpighii between papillæ. *c.* Thicker cords of stretched out spindle-shaped epithelial cells. *d.* Thinner network of spindle-shaped cells, some of which have several processes. *e.* Raised epidermis, to the inner surface of which cells of the upper stratum Malpighii adhere.

Haight found that in herpes zoster, the roof of the vesicle (see fig. 17) is formed by several layers of cells pressed flat, without nuclei, and not coloured by carmine; to its under surface adheres a layer of flattened but nucleated cells from the Malpighian layer, and colouring in carmine. The cavity is divided by thick bands into several chambers, which are again penetrated by a fine filamentous network. The thicker bands extend perpendicularly between the epidermic layer and that part of the surface of the corium which lies between the papillæ. They consist of several series of elongated spindle-shaped nucleated cells. In each loculus thus produced a papilla projects. The filaments passing through these loculi in all directions consist of nucleated cells, partly spindle-shaped, partly furnished with processes; and also of fine fibres. On the surface of the corium, between the young epithelium cells, are here and there cells of another kind, for the most part round, and colouring strongly in carmine. In the wavy connective tissue of the corium (the papillary layer especially) lie a few round granular cells, about the size of white blood corpuscles. These cells increase greatly in quantity, and become multinuclear (pus) when the vesicle becomes a pustule. The cells lying in the corium are prolonged along the blood-vessels into the subcutaneous tissue, where they are collected chiefly around the nerves. The nerve fibres themselves are swollen, and the axis cylinder lies excentrically (see fig. 18). So then there is a multilocular vesicle—the loculi produced by separation and stretching of the rete cells—containing fluid and exudation cells, which are also found in the papillary layer around the vessels. In eczema much the same state of things is present. The vesiculation process begins in the papillary layer by a serous catarrh, the papillæ being filled with serum and exudation cells, the normal cells of the cutis being swollen and œdematous; a network being formed by the altered and stretched fusiform cells of the rete, and exudation cells also appearing in the meshes. The origin of the exudation cells and pus cells in zoster, eczema, and variola is still a matter of doubt. They may be altered connective-tissue corpuscles, as Biesiadecki thinks, or migrated white blood cells escaped from the vessels, or they may be altered and proliferating rete cells or their nuclei, as Neumann believes. By way of summary I put the matter thus:—

Vesicles solitary: seat of fluid between strata of horny layers of cuticle	*Sudamina.*
Vesicles solitary: seat of fluid between horny and mucous layers	*Pemphigus.*
Vesicles, or bullæ compound: loculi formed by the stretched-out cells of the rete.	*Variola.* *Herpes.* *Erysipelas.* *Blister.* *Eczema.*

Further, in sudamina, pemphigus, and blistering there are no inflammatory elements present, but merely the effusion of serum and its results, whereas in zona, eczema, and variola, there are exudation cells as a primary and essential feature, and these seem to be present in the papillary layer and corium. In the first two of the three last-named diseases, at the outset, they migrate into the rete; but in the last-named the inflammatory changes primarily commence and are originally specially limited to the rete, but spread secondarily to the corium. I add a few remarks as regards the behaviour of vesicles in general. They are pointed and isolated in scabies: confluent in eczema: and discrete, large, chambered in loculi, seated on a red base, and disposed in a circular group in zona. When they burst they may, if they form a patch, give place to "discharge" as in eczema. When the cuticle is thick, the fluid does not escape easily. The vesicle may appear as a transparent point, deeply-seated in the skin, as seen in an affection of the hands called most erroneously eczema (see Dysidrosis), in which the perspiratory follicles are dilated and gorged with sweat, giving rise to the appearance of the grains of sago in a cooked pudding. Vesicles, where the cuticle is thick, may fail to burst, and may run into one another, giving rise to large blebs. This is a common occurrence about the fingers. The contents of blebs vary with the nature of the vesicle. They may be sweat or serous fluid, or may contain pyoid and granular corpuscles, lymph, fatty matter. The contents in inflammatory diseases, at first transparent, become milky, and then opaque or purulent, from the development of corpuscular elements.

BULLÆ.

The bullæ, or in reality large vesicles, of erysipelas, herpes, and pemphigus, I have spoken of. Bullæ occur in the disease called rupia, which is syphilitic, and in the syphilitic pemphigus are seen especially about the feet and hands of newly-born children. Here the difference is only one of contents, and probably not of structure, the contents being stained by hæmatin or actual blood escaped from the vessels. The papillary layer is implicated in the consequent ulceration. The size of bullæ is arbitrary. They are tense at first, in consequence of the sudden outpouring of fluid beneath the cuticle, but they become flaccid presently, from absorption of their contents, and generally, in non-syphilitic cases, when the raised cuticle comes away, there is a hyperæmic surface left, but there is no ulceration, and the cutis vera escapes injury.

PUSTULES.

Pustules.—These used to be described as elevations of the upper part of the derma, produced by pus, quickly formed, and coming rapidly to the surface: and as accompanied by more inflammation than are vesicles or papules, and by a deeper affection of the tissues. Pustules, again, were stated to be primary and secondary: in the former hyperæmia, together with rapid formation of pus occurring, as in ecthyma; in the latter, the contents of the pustule being rather puriform than purulent, the pustules commencing as vesicles, the contents being transparent and serous, and by-and-by pus being therewith intermingled, as in scabies, and even variola and vaccinia, and in eczema impetiginodes. It was further customary to make three kinds of pustules:—(1), psydracious—viz., those which are hard and pointed, which have a slightly red circumference, and are often seated at the hair follicles; (2), phlyzacious, which are large, raised, vivid red, have an indurated base, and are replaced by thick dark scales, as in ecthyma, and (3), achores, a term applied to the small acuminated pustules that occur in the scalp: these are inflamed sebaceous glands (or boils). But all this is inexact and insufficient for the present day.

Now the remarks which I have made in regard to vesicles and their formation, in the case of herpes and variola, will help the reader to understand the nature of pustules. In the latter the same changes are present in the first instance as in vesicles, only that the exudation corpuscles and pus cells increase in number, and rapidly as such, and infiltrate the tissues to a much greater extent. I may take the pustule of variola for illustration (see Variola, chap. vii. fig. 8); when the pustule is produced, the network formed by the elongated and stretched cells of the Malpighian layer spread deeper and deeper towards the corium, whilst its lacunæ are more and more filled with pus cells, and these exudation cells, be they changed connective-tissue corpuscles or escaped white blood cells, surround the papillæ vessels in great numbers. It is said that there are transitional stages to be observed between the cells and the connective tissue corpuscles at the outer edge of the pustule.

In the network of Malpighian fibres are also found numbers of "nuclear bodies, with granular contents and undissolved by acetic acid." This is Auspitz's and Basch's account. The umbilication of the pustule is due to the tying down of the centre by a follicular duct. I now turn to the pustule of ecthyma, which is hard, has a painful base, and a livid areola, and is the type of what used to be called by the exploded term "phlyzacious pustule." Now in it the changes appear to commence, according to Prof. Rindfleisch, of Bonn,* like eczema, by a serous catarrh of the papillary layer, with rapid formation of pus cells in the effused fluid, and the distension of the rete by and the collection subsequently in it of the exuded fluid and cells, whereas in variola the pus formation commences in the Malpighian layer or rete mucosum. Of course the pustulation in eczema impetiginodes is explained by the formation of pus freely and rapidly in the meshes of the stroma, which constitutes the vesicle, and in the stroma of the papillary layer outside and about the vessels, which are hyperæmic. In ecthyma the localization of the disease is peculiar, and it is just possible that it may be shown that the site of the pustule is determined in the seat, and by the presence of a hair follicle. The indurated base indicates that the inflammation freely invades and affects the deeper parts of the corium. Now as to the pustules of furunculus and anthrax, what is to be said? They are supposed to be circumscribed suppurations of the deeper parts of the corium, together with actual death of the central affected parts producing the so-called "core." But definite information is needed as to the exact nature of this "core." It is not improbable that it is a dead or sloughed sebaceous gland. M. Denucé has given good evidence in favour of this view. There are then pustules that differ as regards the primary seat of the pus formation. In variola it is the rete: in ecthyma and pustular eczema, the papillary layer. And as to the extent of the pus infiltration, it is superficial in eczema, deep in severe variola and ecthyma and furunculus; and the only division of pustules I should make is into large and small, or superficial and deep. In a vesico-pustule there are the characters of a pustule developing out of those of the vesicle, by an increase in the number of pus corpuscles at a later stage. The assumption of the characters of the pustule from the first only means that the pus cells are produced at an early date.

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* Lehrbuch der Pathologischen Gewebelehre, pp. 234-239. Leipzig: Engelmann, 1867-9.

SQUAMÆ.

Squamæ or *Scales.*—A few words will suffice to afford a clear understanding of their modes of production and the indications which they afford of disease. Scales and squamæ are of course quite distinct from crusts which are formed of dried secretion. Scaliness or squamation is of very varying significance and importance in diseases of the skin. On the one hand it is only an accidental phenomenon, and as such accompanies all diseases in which the skin is inflamed or hyperæmic, and on the other it may constitute the essential disease present. As regards the first condition, whenever the nutrition of the cutis is seriously disturbed, the epithelial formation suffers. The cells of the cuticle are, likewise, imperfectly formed, and are rapidly thrown off. This is the case in erythema, however produced; in the acute specific diseases, especially scarlet fever and measles, in which the cuticle dies, as it were, in consequence of the operation of the poison, and is thrown off to be reproduced: at the fag end of all inflammatory diseases, as herpes and eczema, when the cuticle before destroyed by vesiculation or pustulation begins again to re-form, but to re-form imperfectly, in consequence of the disease and hyperæmia of the cutis which still persists; and in the disturbance resulting from the attack of fungi, as in tinea versicolor, tinea tonsurans. In syphilitic disease and in lupus, where the deposit or growth of new granulation tissue has not destroyed the rete or horny layer, there is disturbed formation of cuticle, in part the result of the hyperæmia present. So in other diseases scaliness is at some part of their course an accidental occurrence.

But there are on the other hand, as before observed, several diseases in which one of the characteristic features is the free production, collection, and shedding of epithelial scales. These diseases are psoriasis, pityriasis, and xeroderma with its exaggerated condition ichthyosis. In psoriasis the cells of the whole epidermic horny layer, and of the rete are largely increased, and cells like altered rete cells abound in the papillary layer around the vessels, the papillæ themselves being greatly hypertrophied, and their vessels engorged. There are no exudation cells. The disease might aptly be described as an over-growth of epithelial cells. The collection of cells on the surface is an evidence of this, and these scales have pits on their under surface that receive the enlarged papillæ.

Pityriasis—that term being used to denote simple hypershedding of cuticular cells, generally depends on simple hyperæmia, but sometimes as in pityriasis rubra, the hyperæmia being marked and extensive, the shedding of scales—or flakes rather, for the scales become flakes—is also marked and extensive. Pityriasis or epithelial desquamation needs to be distinguished from mere seborrhœa, in which small fatty plates, formed from an excessive secretion of sebum, are present. There is a "fatty," in addition to an epithelial scaliness. In xeroderma, the horny layer of the cuticle is greatly hypertrophied as a congenital condition, the entire skin being likewise thickened. In some cases the sebaceous glands furnish a certain quantity of sebum, and this matted together with epithelial cells into plates, gives rise to ichthyosis, or fish skin disease. It is very probable that whenever desquamation takes place, some physical change in the thrown-off cells has happened.

Rindfleisch I think it is who says that the formation of cells is so rapid that they have no time to become adherent. But M. Ranvier* questions this, and on the ground that it is not the deep layers of cells that are thrown off, nor does desquamation occur directly after their formation. That is to say, neither seat nor time of desquamation countenance Rindfleisch's view; and M. Ranvier declares that when desquamation begins the nucleoli of the horny cells of the rete mucosum dilate, and so a modification of the cells is produced. The horny deposit does not make its appearance, and the cells remain in a softened condition, the cells in fact undergo a mucous transformation, and so are thrown off.

Speaking generally of scaliness then, it may be said that it is fatty or purely epithelial; that it is accidental and secondary to other diseases, or a primary and an essential part of the disease present. In xeroderma it is seen as a congenital defect, in psoriasis as part of a general hypertrophy of the epidermis and papillary layers, and in desquamation as a direct result of hyperæmia, the two latter constituting pityriasis. In pityriasis in its simple form it is a throwing off of branny scales, and in pityriasis rubra of flakes, and in psoriasis the scales are heaped together, superimposed the one upon the other, into white silvery thick masses, especially about the elbows and knees where the cuticle is thick. In some cases of scaliness the scales are loaded with the spores and threads of fungi on their under surface, as in pityriasis versicolor; the scales being given off as a branny desquamation, and the patch having a fawn colour. Simple pityriasis is accompanied by itching, and heat to a slight degree. Now and then the epidermis is thrown off in large lamellar pieces as from the hand and foot, which seems to result simply from hyperæmia. This is rare.

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* Du rôle que joue la transformation vésiculeuse de nucléoles dans la désquamation de la peau, *Gaz. de Biologie*, 1869.

Now I want to add one word about scaliness as it is seen in syphilitic eruptions. It is said that in these the scales are few and adherent. Neumann, for instance, gives the diagnosis between psoriasis vulgaris and syphilitic psoriasis thus: "In the first there is a great mass of scales of a shining pearly appearance, loosely attached to the substratum, and when removed showing a bleeding corium: in the second the mass of scales is small, of a dirty whitish colour, closely adherent, and on removal showing a pale-red infiltration of the corium." Now I contend that though the one condition is rightly termed psoriasis vulgaris, the other is wrongly termed psoriasis syphilitica. The essence of the one is the hypertrophied growth of the rete cells and the papillary enlargement. The essence of the other is a new formation of granulation tissue, which, though it so far disturbs the nutrition of the epidermis as to give rise to scaliness, and so gives rise to the appearance of psoriasis, yet involves rather a diminished formation of epidermis—the opposite condition to that seen in psoriasis. The same thing is seen in lupus; if the new growth only deranges but does not entirely overwhelm and prevent the formation of epithelium, there is slight scaliness over the lupus patch, and to this state of things the term lupus-psoriasis has been applied. There is no psoriasis at all present. There is a diminished—though disturbed—production of cuticular cells, and there is no hypertrophy of the papillary layer. There is a thin layer of cells on the granulation tissue, but it is deceptive. It is not the cuticular hypertrophy that is of moment, but the growth of new granulation tissue in the cutis.

TUBERCULA.

Tubercula.—By the term tuberculum Willan meant any lump or large pimple not defined by the term papula. He said a tuberculum is "a hard, small, circumscribed and permanent tumour suppurating partially." Little fleshy lumps would roughly describe tubercula. Now of course little lumps are formed under a variety of conditions in the course and cure of diseases—as in cicatrizations, enlargements of glands, as in indurated acne, dilatation of the sweat and fatty glands, in cysts, and so on; but these are not essentially primary, but mostly accidental conditions connected with special diseases. The term tuberculum should be applied to primary lumps formed of new tissue—new growths—in and from the skin; and in that sense it is applicable to fibrous outgrowths of the connective tissue (*homoplasms*), including molluscum fibrosum or fibroma, keloid, framboesia, to growths of new granulation tissue (*neoplasms*), as in lupus, syphilis, leprosy, cancer, and rodent ulcer, and to strumous disease of the skin. So then it will be evident that tubercules or tubercula occur as a primary condition in those diseases which are essentially characterized by new growths in and from the skin. The diagnostic features of the several tubercula are to be found in the specific characters of the tubercula themselves, and the changes they undergo together with the nature of concomitant phenomena. I will therefore give the pathological features of these several tubercula and anticipate to some slight extent what I have to say under the head of general diagnosis as regards concomitants, because I think some very important lessons may be missed if I divorce altogether the local from the general phenomena.

And first of simple hypertrophies, or simple fibrous growths of the skin. Warts I do not refer to particularly. First there is fibroma or molluscum fibrosum, which disease consists of outgrowths of the integumentary structures—the fibro-cellular elements of the cutis—which push before them the most superficial parts. These fibromata at the beginning are small, but they increase to any size; and they have this characteristic feature, that they look and feel like ordinary integument; as they enlarge they become pedunculated. They feel soft and lax; and look as the skin, white. A man may have his whole body covered over with these tumours, of most varying size. The minute pathology of the disease is an hypertrophous growth of the fibro-cellular tissue of the skin, and especially that part which forms the dermic layer of the hair follicle. In keloid there are tumours formed by hypertrophy of the connective tissue of the corium originating around the tunica adventitia or external coat of the arterioles of the skin, in which elastic fibres are abundant. It forms raised, well-defined tumours, of a pale colour at first, and then pinkish with vessels running into them; and possesses this peculiarity, that the new growth contracts at the edge and puckers the integuments about it so as to induce distortion. It is this contractibility that is characteristic of keloid. The papillary layer and epidermis are unaffected primarily. Keloid occurs as an idiopathic disease, or it arises in the seat of wounds of all kinds, in whose cicatrices grow hard fibroid nodules of greater or less extent. It is not a common disease. The main difference between keloid and scar tissue is that in the former the fibres run in bands, parallel to the skin, whereas in a scar they form a felted network. Another disease in which tubercles are present is frambœsia, but this is a very rare and an exotic disease, and so I need not dwell upon it here.

I therefore pass to consider the characters of those tubercular formations which are made up of new kinds of tissue (heteroplastic), and are of such common occurrence in the diseases lupus, syphilis, cancer, rodent ulcer, and leprosy. In the two former and in the latter—viz., lupus, syphilis, and leprosy, the disease originates in the true skin, and the tumour-like masses form a link in regard of intimate structure, intermediate pathologically speaking, between inflammatory products on the one hand, and real tumours on the other. They are distinguished by Virchow, as *granulation* tumours—the tissue of which they are composed being called *granulation* tissue, and this is believed to take its origin from the connective tissue, whereas, in cancer of the skin, that is, epithelioma and rodent ulcer, the disease originates in disorder of the epithelial tissue elements. The *granulation tissue* is made up of cells like lymph cells, which are the connective tissue corpuscles arrested in their growth according to Virchow, or actually escaped white blood or lymph cells according to others, enclosed in groups in a network of fibres. The peculiarity of this cell growth consists in the permanent continuance of the new formed elements in the granulation stage, in the fact that it does not undergo further development, and lastly, in the abruptness of its passage from the granulation stage to one of degeneration, leaving atrophy behind. If there are no marked differences in the minute anatomical characters of the granulation tissue, there are in the coarser features, and in the behaviour of the actual tubercular formations themselves in lupus, syphilis, and leprosy, and these I shall state, though I admit the concomitant conditions are our chief guide to diagnosis. Now in lupus the tubercles are soft and vascular in the mass, more so than in syphilis, being made up of peculiarly immature cells probably. The cells tend to migrate widely and deeply, hence the tendency of the disease to quickly spread. These cells undergo degeneration easily, and hence the rapidity with which ulceration is wont to occur. So then the tubercles of lupus are soft and vascular. They have a gelatinous aspect, which is characteristic, and they are reddish; and there is one more point to notice about them—viz., they do not occur in a scattered form around a main patch, and they are covered by few thin and adherent scales, whilst the surface does not, when ulceration sets in, discharge so very freely or greatly crust. These characters contrast with those of syphilis, the tubercula of which are less vascular, and therefore paler. Composed of cells perhaps more closely packed together, and of more fibres, they lack the gelatinous aspect of the lupus tubercles, and I would add, they occur in the scattered form, a point to which I attribute great diagnostic importance. When they ulcerate there is free discharge, and large green purulent dark crusts form freely. The tumours of Elephantiasis Græcorum are more like those of lupus, being very rich in cells. They have this peculiarity that they do not tend to soften up, and degenerate so rapidly as in the other granulation tissues of lupus and syphilis. Now I may just observe, that in lupus there is no evidence of disease in the form of related constitutional conditions or other phenomena. This is altogether different from the case of syphilis and Elephantiasis Græcorum, and though one may sometimes be able correctly to diagnose lupus from syphilis by the mere characters of the eruptions in these diseases, yet as the rule, one is guided by an examination of the related phenomena, which show that syphilitic tubercula form only a small part of the existing disease. In scrofula livid red soft tumours, which soften up, suppurate, and give place to ulcers, are formed. These, however, exhibit the behaviour of inflammatory products, and can be at once distinguished from lupus.

In the disease known as the elephant leg, the Elephantiasis Arabum, Barbadoes leg, or pachydermia or bucnemia tropica, nodules are formed in the skin, which is generally indurated. Here there is no granulation tissue, but merely fibroid infiltration of the corium, and subcutaneous cellular tissue, the result of lymphatic œdema.

Now as in lupus, syphilis, and leprosy the real seat of the disease is the true skin, its deeper part: so in cancer and rodent ulcer the essential seat of the disease is the epidermis, as it would really appear from recent observation, of the lymph vessels of the skin. The tubercle of epithelioma as affecting the lip, the scrotum, and the vulva is at first "a little lump under the skin, flattish, hard, and slightly tender, its surface becoming slightly dark or red, and slightly moist, and presently, perhaps, scabbed or cracked, the induration extending at the base, and ulceration setting in at the centre of the lump." The ulcerated surface is generally papillated in appearance, and covered by a dirty ichor. The edge is hard, and presently everted and undermined. If a section of the mass be made, it has a greyish aspect, tinged with yellow at times, and on microscopic examination a stroma formed by the connective tissue of the skin is found, containing vessels; it is best seen in the deepest part of the tumour—forming a network in which are embedded bodies and parcels of various sizes and arrangements, made up of epithelial cells. These will be fully described in speaking of cancer. Rodent ulcer begins, as does cancer, by a small hard pimple, which runs a very slow course to ulceration. It also scabs. The surface of the ulcer is clean, it shows attempts at repair now and then, the edge is hard, but not undermined or everted. There is no surrounding induration or gland implication. A section of the tubercle is firm, grey, and fibrous. The minute characters are the same as in epithelial cancer, save that there is more fibrous stroma, and the globular bodies and epidermic capsules are less in amount.

SECONDARY CHANGES.

I mentioned in enumerating the several varieties of elementary lesions that these were followed by certain secondary changes, which demanded special notice on account of their being in some degree important in a diagnostic point of view. These secondary changes are desquamation, excoriations, crusts, stainings, ulceration, scars, and so on; and I have incidentally, in speaking of elementary lesions, noticed some particulars, but will now make some special general remarks about them.

1. I need say no more in regard to desquamation than what I have said under the head of squamæ.

2. *Crusting.*—This occurs wherever there is discharge or suppuration. Crusts, of course, are not like scales, except in ichthyosis, made up of epithelial matter, but of inflammatory products, including pus cells in greater or less quantity. Crusts cannot be marked among the primary phenomena of disease; they occur in the later stages, and subsequently to primary changes. But there are two classes of cases I may make. In one crusts form in connexion with sero-purulent secretion without ulceration, in the other they are consequent upon distinct ulceration. In regard to the first class, if there be actual discharge the crusts will be freely formed. If the discharge be mainly serous, they are thin, light, filmy crusts, as in impetigo and simple eczema; if the discharge be mainly purulent, they are thicker, yellow, and distinct crusts, as in eczema impetiginodes. The very free formation of purulent crusts in young or old, which is not explained by inflammation of great intensity, is indicative of the presence of a pyogenic habit, or what is almost synonymous, the strumous diathesis. This is a point of the greatest practical importance. Crusts will be reproduced when cast off if the discharge continues, as in eczema; and but once formed or not continuously re-formed, if the discharge is of temporary duration, as in herpes. They will be large and irregular if the discharge occurs over a wide area as in eczema, or small and circumscribed if the vesicle or the pustule is solitary and distinct, as in ecthyma, furunculus, and sycosis. They will be more adherent when the pus does not actually escape from the skin, but is confined before it dries up, as in ecthyma and furunculus, than where it is freely poured out, and escapes from the skin freely upon the surface. They will be dark and discoloured where sanious

fluid is mingled with the secretion, as in rupia (which is syphilitic) and ecthyma cachecticum. In regard to the crusts forming as a consequence of ulceration a word or two must be said. It is in inflammation connected with cachexia and the softening up of the skin connected with certain diathetic states that these crusts are observed. Very rarely a simple inflammation, ex. gr. ecthyma in a bad nourished person may go on to ulceration, and then there are discharge and crusting, but the crusts are flattish, and it is easy to see from what cause they arise. The seat of ulceration is often in the legs, where the influence of varicose veins and gravitation helps out the ulceration. But there are other cases in which there is no cachexia in the sense of mal-nutrition, where ulceration and subsequent crusting are to be accounted for by some specific influence of a constitutional kind, and here there are two classes of cases. The ulceration may be preceded by certain elementary lesions, tubercula, which naturally tend to ulcerate, and no difficulty occurs in diagnosing between lupus, cancer, syphilis, rodent ulcer, and the like, as the rule. The crusts in these cases are peculiar. But there is another class in which an ordinary skin affection, not usually prone to ulcerate and crust, does so exceptionally; and then one must decide from the nature of the crusts, etc., what the exceptional influence at work is. First of all, as to the differences of the crusts of lupus, syphilis, cancer, rodent ulcer, and struma. Those of lupus are generally flat and adherent, and not specially dark-coloured; they are, moreover, not free in proportion to the amount of tissue change. On the other hand, in syphilis the crusts are adherent; they are dark-coloured, and free oftentimes in proportion to the amount of the tissue changes; and what is of importance, they are made up of a good amount of pus and sanies. Rodent ulcer does not crust when the disease is marked, though it tends to cicatrize: and in cancer there is often slight scabbing. This all means that there is little discharge in lupus and cancer, none practically in rodent ulcer, and often a good deal in syphilis. Given a case of what looks so like lupus and syphilis that the diagnosis is difficult and there be free scabbing, one may decide in favour of syphilis, particularly if the crusts be dark, which implies that sanious fluid has been poured out. The cockle-shaped crust is diagnostic of syphilis. It is produced by the drying of successive yieldings of sanious pus pushing forward successively. I now turn to the other class of cases, to which I referred as one in which crusts form under exceptional circumstances so as to constitute an unusual feature; for example, a case of psoriasis is complicated not by very free scaliness, but crusting: or an eczema by the formation of scabs like the bark of a tree—hence the term eczema scabidum. There are two things that may account for this, the presence of the strumous diathesis, or a syphilitic taint, and one must decide by the history of the disease and patient, his general aspect and concomitants.

Crusts, it must not be forgotten, are formed sometimes solely of sebum exuded in larger quantities, then they are flat, dirty white, greasy and "stuck on." But crusts may be made up likewise of parasitic fungus as in favus, when the crusts are dry, brittle, and light sulphur-coloured, and their lupine shape is almost pathognomic.

3. *Ulceration.*—This depends of course upon the destruction of the true cutis. How is this destroyed? By inflammatory action if it be severe and pus formation extensive and involving the cutis; by infiltration of the true skin by new products (that take the place of the normal products), and the degeneration of these products, as in cancer, syphilis, lupus, leprosy, scrofulous disease; and by the softening up and decay of the normal tissues through sheer want of nutrition, especially after traumatic injury and congestion, as in the leg. These are practically the three sources of ulceration in skin disease, and they may be more or less intermingled—ulceration from simple inflammation is not common, and only common where there is cachexia; its nature is not difficult to recognise. But as regards the ulceration of lupus, syphilis, and cancer, there are differences. Dr. Auspitz, speaking of lupus ulceration, says "the appearances do not differ essentially from those of other forms of ulceration. If the rete Malpighii is not completely destroyed and thrown off, its elements are found in a state of fatty degeneration, and at spots transformed into molecular masses. The limits of the papillæ towards the rete may be seen to be already indistinct, whilst the granular detritus and suppuration are already appearing in the tissue of the cutis: in the deeper layers of the cutis, here and there local, limited areas of fatty degeneration of the new formed tissue elements are to be seen. If the molecular destruction is further advanced, finally there is a loss of substance covered over by a thick brown crust, and extending more or less deeply into the tissue of the cutis. The base of the ulcer consists of growing granulations, consisting of cells of the cutis growing forward and covered with an abundant pus, whose elements present nothing of a specific character. Neither the pus, nor the base of the ulcer, nor its limitation and form presents any characters distinguishing it from other ulcerations arising in similar conditions." This gives a very good idea of the general characters of ulceration in the cases under notice. If there are no differences in mere minute aspect there are in concomitants and the course of the disease. As regards the ulceration itself, when that occurs, in lupus it is superficial generally speaking, and rarely deep; the surface is also red, slightly mammillated, quasi-gelatinous, smooth, covered by a thin exudation. The edges are thick and inflammatory, not undermined, not everted—that is, there is little pus formation, the tissue simply degenerates and atrophies. In syphilis it is foul, dirty, sloughing;

there is a good deal of pus formation; this is accompanied by a copper-coloured areola, and sharply-cut edges, that are everted slightly. In cancer the ulcer is papillated, the edges everted, undermined and hardened, the surface is covered by a foul ichor. Rodent ulcer is clean and without ichor, but rugged whilst the edges are hard, sinuous, and abrupt in both directions. The only difficulty lies between lupus and syphilis, because with the others there are generally other characteristic concomitants. But given lupus or syphilitic ulceration, and a difficulty in diagnosis, I would say if there be free ulceration and free crusting as compared with the amount of deposit, it is more likely to be syphilis than lupus. I repeat that when an inflamed surface occurs, and it undergoes little change for a long time, and then it ulcerates with or without crusting, and this is apparently unaccounted for by the mere inflammation, the case is probably one of syphilis, unless a marked strumous history can be made out, or a strumous habit of body. I am in the habit of saying, if a patient comes before me with a red inflamed patch, and there be ulceration, that the disease is either lupus or syphilis; if there be but one patch, lupus; if many, and scattered, syphilis. The concomitants help one further of course. That is to say, the two common ulcerating diseases of the skin are lupus and syphilis.

4. *Excoriations.*—All I need say about these is, that their seat is often very suggestive. If they are about the front arms, they are probably the result of scratching practised to relieve the itching of scabies. If they are about the clavicular and scapular regions they are almost sure to be the result of scratching to relieve the irritation set up by pediculi. In impetigo contagiosa the scratches made by the patient "fester" rapidly.

5. *Scars* and local atrophies are important. They follow ecthyma when severe, variola, herpes zoster, furunculus, anthrax, pustula maligna, syphilitic lupus, and strumous ulceration, and the absorption of tubercles without ulceration. The seat of scars in the two first is suggestive. They are very small in ecthyma, and in syphilis and lupus ulceration they are more or less extensive; but there is this difference, that they are multiple in the former and not in the latter, as the rule. A distinct scarring in spots larger than would be produced by ecthyma or furunculus, and in more than one place in the body together, and not the face in one spot only, say the leg and arm, not in the seat of a gland—for then it may be strumous, is very suspicious of syphilis. Loss of substance without ulceration is often seen in lupus and syphilis; the difference in the scars depends upon the extent of tissue destroyed; for in the atrophy without ulceration, neither the papillæ nor glands need be destroyed. Old scars of an extensive kind mean then practically syphilis or lupus. If multiple,

syphilis; if solitary and on the face, lupus. This is a rough guide to diagnosis. Those who wish to know more about the philosophy of scars may consult a paper by Dr. Swerchesky, on the "Physiology and Pathology of Scars," treating of the mechanism of scars, including an account of the laws of cicatrization, cleavage, etc., published in the July, 1871, number of the American *Journal of Syphilography and Dermatology*, and continued in a later issue.

CHAPTER IV.

ETIOLOGY—CAUSES OF BLOOD, TISSUE, AND NERVE CHANGE—INFLUENCE OF AGE, SEX, FLANNEL, SCRATCHING, ETC.—CONDITIONS WHICH DETERMINE THE LOCAL DEVELOPMENT OF DISEASE.

Now in the last chapter the general appearances of diseased changes in the skin were discussed. It is now necessary to indicate more distinctly the causes of these changes.

The reader will remember that in the introductory chapter I laid great stress upon the necessity, in studying skin diseases, of trying to determine in what tissue any given disease originated, whether it be in nerve, blood, cell, or lymphatic. I consequently think it best to arrange the causes of diseases of the skin according as they seem to operate upon and through or originate in, disorders of these respectively.

In order that nutrition may be healthily carried on in any part, there must be—(1) a proper state of the blood; (2) a proper condition and behaviour of the tissues to be nourished; and (3) a right exercise of the controlling influence exerted by the nerves. And these three must work harmoniously together. Deviations from health may originate consequently from a flaw in any one of the three conditions above named. The theoretical origin, therefore, of diseased changes in the skin may be specially in the blood, as we see in zymotic affections, and here the skin affection is only symptomatic or part of a more general disease; in the tissues themselves, as seen in the case of warts, cancer, keloid, psoriasis; or in the nerves, as in pruritus, and, it is thought and now generally taught, herpes, pemphigus, and urticaria. If the exact origin of disease be not as stated, the parts of the system chiefly concerned in the production of diseased conditions may be emphatically in one case the blood, in a second the tissues, and in a third the nerves. But of course, inasmuch as the ordinary action of these three agencies is bound up and related in the closest manner in health, the misbehaviour in disease of one affects secondarily, the proper action of others of the three agencies concerned in healthy nutrition. So that all are more or less involved in disease when fully developed, but primarily one or the other is mainly concerned in it.

Now there is much readiness to ascribe disease to changes in the blood, but not to sufficiently recognise the influence of perversions in the inherent cell-life of the skin structures, nor the controlling supervision of the nerves in the generation of cutaneous disease. If I am asked for an example of disordered tissue-life, I should give that of cancer; the local tissue changes are not sufficiently explained by any alteration in the blood current. There is no appreciable disorder of it. *That* is secondary to the cell proliferation, which is the essential disease in the early stage. Take keloid again—hypertrophous growth of the fibro-cellular tissue of the skin, is the only thing to be detected ; it is apparently primary. These are examples of deviations from the normal cell-life of the skin, at present explained by no blood cause ; by nothing save a change *originating* in the tissues.

So is it in some degree with the nerves. It is probable that the origin of some diseases of the skin may really be in the central nervous system, and the cutaneous trouble is the effect of a general disturbance of the nervous system ; or in the nerves themselves that run to the affected part ; at any rate the nerves are mainly concerned, or they constitute the agency by which the morbid changes in the skin are produced. No one doubts that herpes results from irritation of the nerves going to the seat of eruption. It is true that the nerve disorder which seems to be primary, may result from a blood change, but we know that it may also arise from a local impression. Each day pathology is more fully proving the neurotic origin of certain cutaneous diseases.

There are then three main ways in which the nervous system may act upon the skin (in addition to altering its sensibility, and through reflex action), first by inducing changes in the calibre of the vessels, and so influencing the transudation of fluid ; secondly, it would seem by encouraging an hyperactivity in the cell-life ; and thirdly, where there is general debility there is lessened nervous control over tissue, the reparative process is not so active, and the skin cannot resist so well as it should external influences that tend to injure it, or induce disease.

But it would seem that not only are blood, tissue, and nerve collectively and individually involved in the production of pathological results as regards the skin, but also the lymphatic system. This, however, one would imagine, from the little notice taken of it by the physician, is a thing out of place and of no service. My reasons for thinking that changes in the fibro-cellular tissue and disorder of the lymphatics are related, will be stated under the head of hypertrophies and atrophies, in speaking of keloid, scleroderma, and their allies.

I have thus far generalized so as to enable the student to comprehend in some degree the general sources and nature of the changes that occur in skin diseases, and to show that in different morbid processes, disorder of the blood in one, of the tissue-life in another, and of the nerves in another, are *principally* concerned as causes of mischief.

Having thus stated the three main channels through which "causes" act, I may now give a summary of the more generally recognised influences that induce blood, nerve, and tissue changes, and I especially enumerate the causes that produce

(A.) ALTERED STATES OF THE BLOOD-CURRENT. They are—

1. Poisons of acute specific diseases—ex., those of small-pox, scarlatina, rubeola, &c.
2. The circulation of special poisons, be they animal—ex., syphilitic: medicinal substances—*e.g.*, arsenic, belladonna, copaiba, nitrate of silver, bromides: or dietetic, such as shell-fish, giving rise to urticaria, roseola, erythema.
3. Dietetic errors, as in wine-drinkers, high livers, non-vegetarians, &c., leading to the increase of urea and uric acid in the blood.
4. The tuberculous, scrofulous, and lymphatic dyscrasiæ, giving rise to non-specific eruption—ex., impetigo, acne.
5. The gouty and rheumatic diatheses, as in lichen agrius.
6. Altered and lowered nutrition from such causes as bad living, poverty, misery.
7. The accumulation of excreta in the blood from non-excretion, suppression of natural discharges, kidney disease, &c.
8. Convalescence from severe and lowering diseases by which the body is rendered much less able to resist disease.
9. Climacteric, or endemic influences, often malarial in nature, which act by deteriorating the system generally, and give rise to the frambœsia of the West Indies, the sibbens of Scotland, elephantiasis and its allies, the pellagra of Lombardy, the buenemia, or Barbadoes leg, the Aleppo evil, and Delhi boil, the carate of New Granada, &c.
10. Disorders of the liver and spleen leading to pigmentary deposits in various parts, jaundice, and pruritus, &c.

(B.) There are certain states of mal-nutrition in which disordered tissue-life seems to be the prominent feature. The causes of some are unknown. Local irritants, however, frequently lead to alterations of tissue, and rank here with burns, scalds, parasites, the occupations of bricklayers, masons, and washerwomen, etc., as causes of local mischief.

I have seen dyers, and those who handle cheap clothing, suffer from erythemata due to the irritant action of dyes.

I believe that certain tissue peculiarities may be inherited. The father may transmit dispositions in tissues to behave in particular ways directly to the child, as a local peculiarity, independent of any blood state, and in this sense psoriasis, cancer, ichthyosis, may be hereditary.

In this place must be mentioned parasitic fungi as disturbers of local nutrition.

(C.) Influences that play upon the nerves. Oftentimes the nerves are morbidly excitable, as in urticaria. All causes of debility tend to perverted innervation, but as a rule local irritants are those agencies that induce nerve disorder, which leads to diseases in the skin. Ex.: Want of cleanliness; alternations of temperature; undue exposure to the sun; the action of ordinary local irritants; occupation involving special causes of local irritation, as in cooks and firemen, who are constantly exposed to great heat. Then chronic visceral disease may be reflected through nervous agency to the skin, and so uterine, gastric, and intestinal affections, often give rise by "sympathy" to chronic congestion of the face and other cutaneous disorders.

Now it is remarkable that the two leading dermatologists of the day—Wilson and Hebra—should totally disagree in regard to the comparative influence of the two great groups of causes, general and local. Hebra is *the* advocate of the local origin, the idiopathic origin of skin diseases; Wilson of the reverse doctrine. Hebra says, "much more potent in the generation of disease of the skin than the internal causes that have their seat in the organ itself, are those agencies which are external to the body, and which affect the skin directly; thus are produced the so-called *idiopathic dermatoses.*" Among the external causes which Hebra enumerates are climate, clothing, occupation, mode of life, atmospheric conditions, unwholesome handicraft, pressure, friction, contusion, scratching, neglect of cleanliness, too frequent or too energetic washing and bathing, irritants used for medical purposes, such as rubefacients, epispastics, the moxa, &c., and epiphyta, dermatozoa, and epizoa.

Now, in the instances of handicraft, pressure, friction, and uncleanliness, Hebra can best establish his point; but even here it is not the healthy mechanic who gets his skin disordered, but he who has been debilitated, or who is "out of work," or is disordered by bad living, or drinking habits, or the like.

The local cause is the excitant of the disease, rather than the sole producer, in many of these cases. He certainly cures most rapidly who looks after the general state of health, removes blood impurification, and tones up the body. But who will say that parasitic disease is entirely local? There is surely a general condition of nutrition which must be present before fungi will flourish.

In the majority of cases there is a predisposed state of system, and the actual disease is evoked by local agencies, and these, as I have said, act frequently through the nerves of the affected parts.

There are two sources of local irritation that deserve special notice. I refer to the use of *flannel* worn next the skin, and *scratching.* Oftentimes the simplest and most commonplace agencies, harmless in health, become active agents in the intensification of diseased conditions of the skin. This is the case with the *wearing of flannel* next the skin. It is scarcely necessary to say that some skins are so irritable in health as to be excited to an unbearable degree by the use of flannel. If this be so, then, whenever there is a tendency to exaltation of the sensibility of the skin, this may not only be heightened by the irritation of flannel, but the latter may give rise to decided physical alteration. In a very large number of cases of skin disease pruritus is in this way intensified and the disease even protracted, and in proportion to the degree of uncleanliness. Flannel acts, as a mechanical irritant, by augmenting the local heat, and intensifying reflex action. When, therefore, a congestive state of the skin, or any disposition to pruritus exists, the flannel should be taken off from next the skin, and placed, if necessary, outside the linen;—this will prevent any "catching cold." The diseases in which this is advisable are, chiefly—erythemata, roseola, urticaria, certain syphilodermata in their early stages, scabies, and prurigo. A remembrance of this little practical point will sometimes give us the greatest cause to be thankful that we attended to it, trifling though it be.

Scratching plays an important part in the modification of skin diseases, most of which are accompanied by itching. To relieve itching, scratching is the natural topical application. What does it do? 1. When there is no eruption, it may produce one. For example, in pruritus, it gives rise to excoriations, an artificial eczema, general enlargement and turgescence of the follicles of the skin, with, perhaps, abrasion of the cuticle over and above them; wheals in a nettle-rash subject; ecthymatous pustules in the ill-conditioned. Of course in all these cases there is a basis to go upon—a tendency to the several diseases produced. I scratch a healthy person, and the local injury is soon remedied. 2. It augments and modifies existing eruptions. I see in eczema how it inflames, and increases the discharge and subsequent crusting; in lichen, the thickening of the derma. In scabies it gives rise to the peculiar "scratched lines" so suggestive of the disease, and many of the ecthymatous pustules; in prurigo, the peculiar ecchymosed apices of the papules, and helps out the coarse urtication. 3. When the disease is *non-contagious*, secretion, in scratching, may be transferred from place to place; and if acrid, set up local inflammation; and when *contagious*, scratching is the surest method of inoculation, as in the case of contagious impetigo. Children in this way transplant the disease from the head to various parts of the body. Mothers, beyond a doubt, get the disease about their hands from contact with children.

Now some of the above-named causes of skin diseases have been called *ephemeral*, such as in the acute specific diseases; some *persistent*, as in lichen, psoriasis, ichthyosis, cancer, lupus, and the like. Some come into action once in a lifetime. Some are in constant operation. Others only at stated periods, so that certain diseases are wont to appear at particular periods of life.

Upon the nature of the cause depends the *contagious* or *non-contagious* quality of any disease. It is generally held that parasitic and the acute specific diseases are contagious. I shall describe a form of impetigo which is contagious.

The special influence of age, hereditary transmission, occupation, and heat, will be dealt with in the opening of the chapter on general diagnosis.

Sex has some influence as a cause of disease; males suffer by preference from sycosis, pemphigus, psoriasis, bucnemia, eczema, and epithelioma; and females from acne, kelis, and lupus especially.

It would be a very interesting matter to discuss at length the probable influences by which diseases are determined to different parts of the body. The facts in our possession at present do not however enable me to do more than indicate a few agencies that act in a definite manner in this respect. Diseases are determined to special parts.

Amongst other things, by—

1. The general or local nature of the cause. The whole skin is affected, of course, in acute specific diseases. Locally acting causes give rise to local diseases.
2. By physiological changes, in which the occurrence of disease is favoured by the non-performance (or hyperactivity) of some proper process in some organ. For instance, at puberty the hair formation and gland functions of the skin are called into activity, and any failure in the due formation of hair or the proper performance of the gland function may be a cause of disease: and this is the case in acne.
3. The predilection of parasites for certain structures or parts, for instance, the hair in the case of fungi; the interdigits and wrists on the part of acari: the pubes and the head, in reference to certain varieties of pediculi; the parts kept warm and moist by flannel in the case of the fungus of chloasma.
4. The special exposure of certain parts of the surface to external irritants—for instance, the face to the fire in cooks, or the face and the bared arms to the sun in outdoor workers; the bared legs in the case of the attacks of dracunculus disease; the lower lip to pipe-irritation, evoking epithelioma; the neck to the friction of the collar, inducing boils; and various parts to scratching by the fingers, &c.
5. Anatomical peculiarities; such, for instance, as the free circulation in the tissues of the face liable to be influenced by all changes of temperature; the large supply of glands

as well as their greater magnitude about the hairy parts of the face.

6. A failure in the proper interdischarge of function between the skin and other organs, as when the kidney fails to act properly and throws greater work on the skin, which fails to perform the extra labour demanded of it, and so becomes disordered.
7. The transmission of mischief by reflexion—for instance, from stomach to face, or uterus to the face—should be mentioned here.
8. The contiguity to mucous surfaces, from whence inflammatory mischief may travel to the skin.
9. Auto-inoculation, as in contagious impetigo.
10. Gravitation, as in the legs, by which certain tissues are disordered.
11. The special affection of individual nerve trunks in connexion with the seat of eruption, as in herpes zoster.
12. Hereditary tendency to morbid action in certain tissues. There can be little doubt that a disposition to the development of diseases in particular localities, not less than to the occurrence of diseases of particular qualities, is transmitted from parent to offspring. But then the local disease, or peculiarity of nutrition, so transmitted, must have existed in the parent or the direct ancestors for some time. It must have become, as it were, a habit of the individual. Ichthyosis is a case in point. This is certainly not a blood disease, or directly dependent upon a blood alteration. It is certainly hereditary. The same may be said of psoriasis.

CHAPTER V.

CLASSIFICATION.

The object of classification is so to group skin diseases together that the student may be able, to obtain at once a general view of cutaneous maladies in their rough outline, and also to compare diseases with each other with a view of tracing affinities between them. Much that has been said in the preceding chapter will help towards a clear conception of what is the best classification; inasmuch as it gave a general idea of the causes and the agencies operating disastrously on the skin.

Skin diseases have been grouped in three chief ways: anatomically, pathologically, and clinically. In regard to the two first, no complete system has been devised, and it is self-evident that the best mode must certainly be that which collects diseases together, and arranges them side by side, in their mutual relationship, as exhibited in practice—in fact, clinically.

I perfectly agree with Neumann that the purely histological standard-point cannot yet be adopted for classification, and that the etiology, clinical history, character, and course of skin diseases must be taken into consideration. But an approximation to an histological classification can be made, and Neumann has made it in his system, which is an improvement upon that of Hebra. But I prefer my own arrangement for clinical purposes.

The system of Willan and Bateman was as follows:—

Order 1.—*Papulæ,* including strophulus, lichen, prurigo.
Order 2.—*Squamæ,* including lepra, pityriasis, psoriasis, ichthyosis.
Order 3.—*Exanthemata,* including rubeola, roseola, scarlatina, purpura, urticaria, erythema.
Order 4.—*Bullæ,* including erysipelas, pompholix, pemphigus.
Order 5.—*Pustulæ,* including impetigo, variola, porrigo, scabies, ecthyma.
Order 6.—*Vesiculæ,* including varicella, rupia, vaccinia, miliaria, herpes.
Order 7.—*Tubercula,* including phyma, sycosis, verruca, lupus, elephantiasis, vitiligo, molluscum, acne, frambœsia.
Order 8.—*Maculæ,* including ephelis, spilus, nævus.

I give the system here, since students are sometimes expected at examinations to be acquainted with its details.

I believe that the following will be found for all practical purposes the best clinical plan of grouping skin diseases for the present. Skin diseases may be grouped as:—

1. Eruptions of the Acute Specific Diseases (Zymotic). These I need not specify in detail.
2. Local Inflammations, comprising—
    - (*a*) *erythematous* inflammations, including *erythema, intertrigo, roseola, urticaria, pellagra,* and certain medicinal rashes.
    - (*b*) *catarrhal* inflammation, or *eczema.*
    - (*c*) *plastic*, or papular inflammation, including *lichen* and *prurigo.*
    - (*d*) *bullous,* including *herpes, pempighus,* and *hydroa.*
    - (*e*) *suppurative,* including those diseases that are essentially pustular—ex., *ecthyma, impetigo contagiosa,* and *furuncular* affections, inclusive of Delhi boil, Aleppo evil, and Biskra bouton.
    - (*f*) *squamous* inflammations, including *pityriasis rubra,* and *psoriasis.*
3. Diathetic disorders, including *strumous, syphilitic,* and *leprous* diseases of the skin.
4. Hypertrophic and Atrophic diseases. Under this head are included on the one hand *pityriasis, warts, corns,* and *ichthyosis,* in which the epithelial layers are mainly affected, together with *keloid, fibroma, scleroderma,* &c., in which the connective tissue of the skin is involved—amongst hypertrophies; and on the other, *atrophy,* and *senile decay* amongst atrophies.
5. New Formations, in which the neoplasm is the essential and only diseased condition present. This group includes *cancer, lupus,* and *rodent ulcer.*
6. Hæmorrhages—ex., *purpura.*
7. Neuroses, such as *hyperæsthesia, anæsthesia,* and *pruritus.*
8. Pigmentary Alterations.
9. Parasitic Diseases, including—
    - (*a*) *Animal,* or *dermatozoic,* including *scabies,* or itch, and *phthiriasis,* or lousiness; and affections associated with the chigoe, the dracunculus, the leptus, fleas, bugs, gnats, &c.
    - (*b*) *Vegetable,* or *dermatophytic,* including *tinea favosa, tinea tonsurans, tinea kerion, tinea circinata,* which embraces Burmese, Chinese, and other ringworms, *tinea decalvans, tinea sycosis, tinea versicolor, tinea tarsi, madura foot,* and *onychomycosis.*
10. Diseases of the Glands and Appendages, including—
    - (*a*) Diseases of sweat glands—ex., *hyperidrosis, anidrosis, chromidrosis, miliaria, sudamina, lichen tropicus,* &c.
    - (*b*) Diseases of the sebaceous glands—ex., *seborrhœa, steatodes, acne, xanthelasma, molluscum contagiosum, &c.*
    - (*c*) Diseases of the hairs and their follicles.
    - (*d*) ,, ,, nails.

I really think that this is a very convenient method of grouping skin diseases after a clinical fashion. The student must have some plan of reducing the multifarious maladies of the skin from chaos to some order, and the above I have found to be both useful and acceptable.

Now it will be observed I have not given in complete detail the various diseases included under the separate headings. I have purposely omitted the rarest forms of disease, and been content to indicate the various classes of skin diseases met with clinically, and to furnish examples which any one will recognise as illustrations of the different groups, even if he is only beginning the systematic study of skin diseases. Until the diseases falling under the several headings have been described in detail, it is impossible for the student to comprehend the reason of their being assigned such and such positions in the list.

CHAPTER VI.

GENERAL DIAGNOSIS, PROGNOSIS, AND PRINCIPLES OF TREATMENT.

I. GENERAL DIAGNOSIS.

In making a diagnosis it is requisite to recollect the typical characters and course of eruptions; and that modifications of disease are brought about by diathesis, by chronicity, by remedies, by scratching, by abortive development, and by the intermingling or co-existence of two or more different diseases. The following are the chief points to be attended to in making a diagnosis :—

THE MODE OF ONSET.

The majority of cases of diseases of the skin are not preceded or even accompanied by severe constitutional disturbance; if there happen to be much fever and malaise, especially when the patient takes to bed from a sheer feeling of illness, and an eruption rapidly develops itself, something grave, probably one of the acute specific diseases, is present. This is all the more likely to be the case if the patient falls, as it were, *suddenly ill.* The main guide in these cases is the temperature: if the thermometer be raised in the axilla to 101 or 102 degrees F., and emphatically so if to a higher point than this, there can be very little doubt on the point. However, amongst the occasional exceptions, acute lichen, erythema nodosum, secondary syphilis, acute eczema, pityriasis rubra, acute pemphigus, urticaria, herpes zoster, may be named, but these are not accompanied by high temperature. Secondary syphilis has been mistaken for the mottling of typhus and measles, acute lichen for measles, and herpes zoster for pleurisy, on account of the pain. It is merely necessary to be aware of these mistakes to avoid them. Occasionally in eczema there may be marked pyrexia, but not a markedly high temperature as far as my observation goes. When symmetrical, the disease is usually due to a blood-poison; when unsymmetrical, to local causes or perhaps affections of the nervous trunks.

COURSE AND GENERAL FEATURES.

Perhaps one of the greatest errors committed in diagnosing cutaneous diseases is the dealing with them in a piecemeal manner. It is the universal expectation of the student to be able to diagnose a disease of the skin from merely looking at it. Many a student, if asked with a patient before him, What is that disease? will look—and, it may be, look closely—and then make his diagnosis and give the thing a name. Now in the case of no other class of disease would he do that. He would in the case of a pericarditis or a pleuritic effusion make the physical signs the guides to certain close questionings of the patient as to antecedent rheumatism, pain, subjective symptoms, duration of particular signs and symptoms and the like, and he would base his diagnosis upon the phenomena of the disease as a whole. He ought to act similarly in reference to skin diseases. The course of skin affections prior to coming under observation, and the concomitants of the disease as it exists in the patient when he is actually seeking advice and treatment, should never be lost sight of in determining the nature of the disease. For example, nothing is more common than for the student to mistake chronic eczema in the later dry scaly stage for psoriasis. Now in the former there is a history of sero-purulent discharge, and none in the latter. The one has been inflammatory, the other has not, and to take a later stage as though it represented a disease is a great blunder. I should diagnose an eczema from the character of its onset, its primary lesion—vesiculation giving place to discharge of a peculiar character—its passage through the crusting and desquamatory stages, its accompaniment by itching, its seat, the morbid changes in the skin, and the general pallor and badly nourished state of the individual, and the cause probably also. This line of behaviour should be made a rule. Diseases should be dealt with in their entireties, and not in a piecemeal manner, and mere accidental sequences—œdema, induration, fissuring, &c.—should not be considered as primary and essential features.

One of the first cares, indeed, of the dermatologist should be to distinguish in diagnosis between primary and secondary phenomena. The one set are of course essential points of the disease, and the secondary results may, if care be not taken, be elevated to the rank of important items. I will take one instance. In the case of an erythema in connexion with long-continued congestion, more or less thickening may occur; if this be not clearly perceived to be an accidental occurrence, the diagnosis becomes difficult. Take the case of pityriasis rubra, a disease in which the whole skin becomes intensely hyperæmic with free shedding of scales. If this be properly treated it will disappear, and leave not a trace. It may be unaccompanied throughout its course by any thickening of the papillary layer; but if it continues a long while this layer may be thickened, and then there are present hyperæmia, papillary hypertrophy, and scaliness, as in psoriasis; and the diagnosis between pityriasis rubra and psoriasis could not be made from the mere surface appearances and alterations only. But the two things clinically are wholly different. This shows the importance of attending to the primary elementary lesion and the history and course of diseases.

Again, in searching for the earliest stage of disease when that occurs in patches, it is necessary to go to the edge of the disease since it there presents its most recent characters.

The typical course and characters of any disease may be masked by the co-existent development of a second disease, and here the interminglage of the features of the twain will be detected, as in urticaria and scabies or purpura: scabies and syphilis; eczema and scabies: eczema and psoriasis, and the like. The capriciousness as regards its appearance and disappearance of an eruption of an erythematous type, is suspicious of urticaria. Multiformity means that a disease is complicated, unless it be scabies or syphilis.

TEMPERAMENT.

The dermatologist is generally enabled to say at a glance whether a patient is of full habit and likely to have a loaded system—especially the case in women; whether there be organic disease, or if there be a dyspeptic habit, or an ill-fed system, that signifies debility. If *lymphatic*, the patient is prone to eczema, impetigo, intertrigo, the pustular aspect of scabies and ringworm; if *gouty*, the scaly diseases, chronic eczema, and lichen agrius; if *rheumatic*, erythema nodosum; if *strumous*, eczema, lupus; if *florid*, psoriasis especially. There is also the *cancerous* cachexia, and in *nervous* subjects various hyperæsthesiæ engrafted upon ordinary eruptions. Red-haired subjects are declared to be very liable to pityriasis of the scalp.

THE DURATION OF THE DISEASE.

Hereditary diseases are chiefly—leprosy, psoriasis, ichthyosis, lichen, eczema, syphilitic disease, and pigmentary anomalies.

Congenital diseases are chiefly—syphilodermata, pemphigus, pigmentary nævus, and ichthyosis.

Chronicity.—The more chronic a disease is the more does it tend to become a local disease; and this is the case with hereditary affections (hence in these cases *local* treatment is the most important).

PERIODICITY OF THE DISEASE.

Some eruptions are more or less periodic in their occurrence, as in the case of pemphigus, but the dermatologist should remember that in districts where malarious disease is common, as in the West Indies, a disease not usually possessing periodic features may sometimes be so influenced that its eruption occurs in a "periodic" manner, or the febrile disturbance by which it is accompanied may show itself in "periodic" outbursts. I have noticed this in regard to those who have returned from abroad. The physician must not forget to recognise the fact, that a periodic character may be impressed upon disease by malarious influence. The action of quinine is marvellously efficacious in these cases.

THE RECURRENCE OF THE DISEASE.

Psoriasis, eczema, and syphilitic diseases are essentially those which recur.

OCCUPATION OF THE ATTACKED.

Cooks are particularly liable to eczema and erythema, and bakers, grocers, and bricklayers to lichen agrius about the backs of the hands; chimney-sweepers are liable to epithelioma of the scrotum; cotton-workers to urticaria; butchers and graziers to whitlow, boils, and malignant pustule and ecthyma; dragoons and shoemakers to eczema marginatum in the fork of the thighs; young women who come from the country and have the full diet fare of the London servants and those who change their mode of life, so that it entails more exercise and better living, get an overloaded system that shows itself in erythema papulatum, erythema nosodum, or impetigo.

AGE OF THE PATIENT.

This is very important. During the first six weeks of life congenital syphilis develops itself; intertrigo, eczema of the scalp, and seborrhœa capillitii also occur about the same time. Syphilitic pemphigus occurs, it is said, before the child is six months old, not afterwards; during the first few months and up to and through the period of dentition, strophulus and eczema are met with. I need only mention important facts. Cancer (epithelioma) is a disease of late life—it does not occur before thirty, generally about sixty; and rodent ulcer about the age of sixty and beyond. Lupus is a disease which commences in early and young life, and the same may be said of syphilis. The parasitic diseases occur in the young, rarely after twenty-one years of age. Herpes circinatus (or, as I call it, tinea circinata) is the form seen in adult life. In old people, phthiriasis, ecthyma cachecticum, pemphigus, and pruritus, with cancer and rodent ulcer, frequently occur.

THE SEAT OF DISEASE.

On the *scalp* the following occur: seborrhœa, parasitic diseases, kerion, eczema, impetigo, sebaceous cysts, alopecia, and psoriasis; *about the ears*, eczema; *forehead*, psoriasis, syphilitic acne, pigmentary staining, leprosy, and herpes zoster; *near the eye*, chromidrosis, rodent ulcer, xanthelasma or vitiligoidea, and molluscum; *about the face generally*, acne, impetigo contagiosa, erysipelas, lichen, syphilitic eruptions, erythema; *about the nose*, lupus and acne rosacea; *cheeks*, lupus, malignant pustule, acne rosacea, rodent ulcer; *upper lip*, impetigo sycosiforme, herpes labialis; *lower lip*, epithelioma; *chin*, sycosis; *whiskers*, acne sycosiforme, and non-parasitic sycosis; *angle of mouth*, congenital syphilis and eczema; *chest*, chloasma and keloid; *under the clavicles*, sudamina; *about the nipples, in women*, scabies; *on the side*, shingles; *outer* and *posterior* aspects of the trunk, prurigo and lichen, as distinguished from eczema occurring on the *inner* and *front* aspects; *about the elbows and the knees*, psoriasis; *interdigits* and *about wrists*, scabies; *back of hands*, lichen and grocers' and bakers' itch; *palm of hands* alone, syphilitic disease; *buttocks and feet of children*, scabies; *upper line of penis*, scabies; *scrotum*, eczema, psoriasis, and epithelioma in chimney-sweepers; *front of leg*, erythema nodosum, and in old people, eczema rubrum; *about the anus in children*, congenital syphilis, and in adults, eczema; travelling or developing over, and affecting *generally the body*, pemphigus foliaceus and pityriasis rubra; *in the bend of joints and armpits*, eczema rubrum; and limited to the *hair follicles*, lichen and pityriasis pilaris and lichen planus; and to these and the *sebaceous glands*, lichen scrofulosus.

DIAGNOSTIC FEATURES OF ERUPTIONS.

Maculæ (see pp. 27, 28).

Erythemata.—These consist of hyperæmia simply, and end in desquamation. Mistakes generally occur with roseola, which is confounded with erythema papulatum and rubeola; but it is never accompanied by distinct catarrh. The rash of roseola is rose-coloured at first, gradually getting duller, whilst, unlike measles, it is non-crescentic, but occurs in circular patches from half an inch to an inch in diameter; not on the face: and the rash is often very partial in its distribution. In acute diseases erythema oftentimes occurs about the arms and limbs, as in cholera or rheumatism. Ordinary erythema is of a darker hue than roseola: it has a bluish tinge at its edge, and is not so well defined—*i.e.*, is more diffuse. The erythema of erysipelas is accompanied by tension, shining, smarting, and swelling. E. scarlatiniforme presents all the characters, as regards the rash, of scarlatina, but lacks its general and throat symptoms and the peculiar appearance of the tongue. The rash is seen about the neck, the flexures of the joints, and the trunk; it lasts five or six days, and is often more or less evanescent. The rosalia of authors—rubeola notha, or rubella—holds the same relation to rubeola that E. scarlatiniforme does to scarlet fever, that is to say, there is an absence of the general symptoms, the eruption however being similar, though more partial.

Papulæ on the outer aspect of the limb mainly, with a thickened state of skin, constitute lichen; those with slightly dark apices (coagulated blood) occur on the arms and anterior aspect of the trunk, as a complication of scabies and of strophulus (pruriginosus) in children; to a marked extent they are seen in phthiriasis, accompanied mostly by an atrophied state of skin and "broad" papules formed by an exaggeration of the little areas enclosed by the natural furrows of the skin; intermingled with vesicles and pustules in scabies; soft and red, and intermingled oftentimes with erythema in the strophulus of children; flat and reddish, at first discrete, and subsequently collected together in little parcels, in lichen planus; aggregated and confluent in lichen circumscriptus; formed at the hair follicles, in lichen pilaris and planus, pityriasis pilaris, lichen scrofulosus, and the lichen of phthisis. The most common mistake, that of confounding lichen and scabies, is at once avoided by observing the multiform aspect of the latter and the uniform character of the former.

Vesicles and *pustules*.—The eruptions in which these occur are eminently characterized by the occurrence of discharge; and diseases may, in reality, be roughly divided in this respect into two great classes, the dry and the moist: in the one class, where secretion or discharge occurs, *crusts* form; in the other, crusts are entirely absent. *The character of the secretion* affords most reliable information. If there be *serosity*, without crusts, the disease is intertrigo; if thin, few, flimsy, light-coloured crusts form, and the discharge stiffen linen, the disease is eczema; if the crusts be a little thicker and in little circular patches, herpes or tinea circinata is present. If the discharge be *sero-purulent*, forming yellow crusts, the disease is eczema impetiginodes; or if there be light yellowish scabs that appear as if stuck on and flattened, impetigo contagiosa; *purulent* masses, forming thick masses of a yellow colour, becoming more or less dark, occur in ecthyma, furunculus, purulent scabies, impetigo sycosiforme, impetigo scabida, and sycosis; whilst cockle-shaped crusts are very characteristic of rupia. *Sanious* pus is found in rupia and ecthyma cachecticum. *Fatty* crusts form in acne sebacea, seborrhœa, and sebaceous or false ichthyosis (legs). *Hæmorrhagic* discharge occurs in hæmidrosis, &c. Ulcerative diseases are easily recognised.

It is necessary to distinguish scales from crusts: scales are altered epithelial cells. Redness with scales, lasting on to chronicity, is seen in tinea circinata, erythema circinatum, and herpes iris. Scales, as a primary formation, occur in a partial manner in psoriasis; covering over the body generally in ichthyosis.

Tubercula.—There are four diseases somewhat alike, in which "tubercula" occur: the characters of the tubercula in these several diseases are as follows:—

In *Cancer* (*epithelioma*) tubercles are solitary, flat, *hard*, and tender. Scabs are slight. When ulceration sets in the glands enlarge. There is much infiltration around the ulcer, which is papillated, dirty-greyish, ichorous, or semi-scabbed, with hard, everted, and undermined edges. Epithelial elements may be seen by the microscope.

Rodent ulcer begins as a small, pale, pretty soft tubercle, of very slow growth. It is almost painless, and gives rise to an ulcer, without glandular enlargement. The ulcer has a clean surface, it is not papillary, it is without ichor, but it has *hard*, sinuous, non-everted, and non-undermined edges.

Lupus has as its base an erythema, the skin looking seared; then upon this arise dullish-red, softish, round, gelatinous-looking tubercles, forming patches of various extent. Thin adherent crusts form. There is no pain. The course is indolent. The edges of the patches are inflammatory, rounded, and raised, but not everted. There is always a tendency to repair, and cicatrices form, accompanied by distinct loss of substance.

In *Syphilis* the tubercles commence as papules; they become hard, large, and flattish, but not so flat as those of lupus; they are dull-red at first, then coppery, and often in circles; they pustulate or ulcerate, or increase by a serpiginous growth, and they are sometimes covered by thick dark scales. There is an ulcerating and a non-ulcerating form, the ulceration being often serpiginous and misnamed "lupus." Syphilitic tubercles often occur about the face. The ulceration is dirty, ashy grey, sloughy, and ichorous, the edges sharply cut and everted, surrounded by tubercles of a copper tint.

With regard to parasitic diseases, no serious difficulty ought to arise if a microscope is at hand. Nevertheless, favus and impetigo are confounded with pustular eczema, and tinea tonsurans: notwithstanding that the cupped-crust favi of the former and the dry nibbled patches of the latter ought to prevent mistake. Chloasma, with its itching and desquamation, is very frequently indeed mistaken for syphilitic maculæ. Sycosis is often non-parasitic; in this case, no damaged split-up hairs will be present, whilst the disease travels up into the whiskers.

II. THE PROGNOSIS.

Skin diseases are rarely fatal. When they occur as secondary manifestations implanted upon already existing disease, especially those of long-standing and in debilitated subjects, they are to be regarded according to their extent and nature as indications for grave anxiety. However, pemphigus neonatorum, ecthyma cachecticum, rupia, pemphigus foliaceus, are most likely to be followed by fatal results. Malignant diseases, of course, have a fatal issue. The sudden retrocession of cutaneous eruption is generally considered a most prolific cause of serious consequences; there can be no question that the latter frequently follow the former, but the *modus operandi* of the supposed cause is uncertain.

Hereditary tendencies, especially when exhibited in a congenital manner, render the cure exceedingly difficult; in some cases, for example ichthyosis, impossible. The older the patient is before he exhibits hereditary peculiarities the more likely is he to get well. The presence of the syphilitic or scrofulous habit, the frequent recurrence of the same disease, complications, mal-hygiene, severe disorder of the mucous surfaces, such as ophthalmia, otitis, muco-enteritis, severe local degenerations of tissue (as in acne rosacea), the fact of a disease having become very chronic, symmetrical arrangement of the eruption, intemperate habits, dyspepsia, uterine disorders (such as leucorrhœa), dentition, old age, or very young age, all conduce to protract and render the cure difficult.

As a general rule, a prognosis is required, not as regards fatality or danger, but the difficulty of cure, and particularly the likelihood of recurrence. Lepra, psoriasis, ichthyosis, erysipelas, eczema, urticaria, and lichen, are the most likely to recur.

All parasitic diseases are curable, and this depends upon the facility with which the parasite can be attacked and destroyed. In cases of loss of hair, a cure is said to be impossible if the hair has been lost pretty suddenly; and especially, if there happens no subsequent attempt at re-formation, the scalp at the same time being white, shining, tense, lowered in sensibility, and apparently with atrophied and indistinct follicles. In all cases of skin disease the earlier the patient comes under treatment the more likely is he to get rid of the cutaneous eruption; in other words, the most important point as regards speedy cure is early treatment, before the disease has had time to become localized.

III. THERAPEUTICS.

For practical purposes, as regards therapeutics, I think diseases of the skin may be conveniently grouped under three heads:—

1. Those which are purely local.
2. Those which, though mainly local in their origin, are yet *influenced* or modified by different conditions of the general nutrition, or, if the expression be preferred, by constitutional conditions. These diseases, in fact, require mainly local remedies, but demand the use of such as are *general* as *auxiliaries* to cure.
3. Those which arise primarily or directly from disturbance of the general nutrition or system. Here general are the most important, *local* measures being employed as secondary *aids* to cure.

Now in the first category may be placed warts, the simpler erythemata, and inflammations excited by irritants of various kinds —*e.g.*, erythema, simple eczema, herpes, cancer, keloid, fibroma, nævus, atrophia cutis, scleroderma, ichthyosis, and certain parasitic diseases.

In the second category may be placed the simpler forms of inflammation in badly nourished or debilitated subjects, eczema in its severer forms; lichen, impetigo, ecthyma in some of its forms, pemphigus, acne, and psoriasis probably.

Under the third head fall the eruptions of the acute specific diseases: urticaria ab ingestis; medicinal rashes; all diathetic diseases—*e.g.*, strumous disease, syphilis, leprosy; cachexias of special kinds—*e.g.*, lead poisoning, malarial poisoning, &c.; chromatogenous (pigmentary) diseases; neurotic diseases—*e.g.*, pruritus, diseases connected with disorder of the sympathetic system, &c.

Before entering into further detail, it will be as well to remark here, that in order that treatment should be properly conducted in any case of disease of the skin, the natural history and course of the disease presented for medication should be known and regarded. The object of the physician should be to cut short the natural course of the disease by all means if he can without ill effect, but, if not, to aid in conducting it through its natural course, if that be towards resolution. If the disease be a simple erythema induced by cold or the like, non-interference, rest, or protection of the part, may be all that is required. *What not to do* is quite as important as what to do in diseases of the skin, and both are best learnt in their individual appropriateness to particular cases, by a knowledge of the natural history of cutaneous diseases, a point sadly neglected. The means adapted to directly check the progress of disease are chiefly local. The diseases whose course may be *cut short* by these direct local means are—(1) particularly, local diseases induced by causes acting from without upon the skin—*e.g.*, simple eczema and traumatic erythemata; (2) certain maladies in which it is only necessary that the destruction of new tissue may be accomplished—*e.g.*, warts, lupus, nævi, cancer, rodent ulcer; or (3) disease the cause of which is local and can be rendered inoperative by local means, as in parasitic diseases.

In the majority of cases of diseases of the skin, the cause is acting from within outwards, and there is less chance of rendering that cause inactive by the direct use of appropriate medicaments. It is only by altering the whole character of the nutrition that we can effect a cure. In some cases, as in urticaria ab ingestis, a sharply-acting emetic relieves the patient of his trouble at once—and cuts short his disease. Local measures, as the rule, are adopted not with the view of cutting short, but rather (*a*) in the first place of *moderating* changes in the skin—*e.g.*, hyperæmia, pus-formation, squamation, and the like; then (*b*) *protecting* the diseased part; and (*c*) subsequently of rousing the circulation and absorbents to a healthy action.

My own belief is, that the early stimulation of most skin diseases does an infinity of harm, and I think this erroneous use of remedies arises from the want of a correct knowledge of the natural course of skin eruptions.

I will now proceed to some more particular remarks touching the three groups into which I have divided diseases of the skin.

CLASS I.

In the first place as regards diseases that may be considered local. They are (1) local inflammations excited by irritants in persons of good health. It is often only necessary to recognise the fact that the skin will soon recover from the effect of the irritant; to see that the irritation set up be not increased, and to protect the part awhile. Frequently too much is done in these cases of erythemata. Astringents are used too freely and too early, from the physician forgetting that the ordinary stimulant action of the external air, heat, cold, friction, and the like, upon the hypersensitive, because hyperæmic, surface is vastly increased. The exclusion of the air by powders, and the protection of the part by a layer of cotton-wool, if very simple and apparently a do-nothing affair, is in reality the best treatment; whilst it is beneficial in direct proportion to its speedy and complete adoption. The active hyperæmia having subsided, the vessels may have lost tone, and it is then alone that astringents and stimulants are advisable. This is a principle of treatment of no little importance. Its reasonableness is obvious and experimentally vindicated in practice. (2) Local degenerative changes — *e. g.*, cancer; hypertrophous growths, as keloid. The object is to destroy by caustics, or to remove by the knife or the ligature; of course, the removal should be complete, free, and speedy. It is scarcely necessary to dilate on these points, which emphatically apply to rodent ulcer and its congener epithelioma. An exception is found in the case of keloid, which seems almost certain to return in the cicatrix. Pendulous tumours call for the ligature, as in molluscum. Whether the knife or caustic should be used, or both conjointly, must be, of course, decided by the circumstances of particular instances; but this depends mainly upon the extent of disease. If, as in rodent ulcer and nævi, the growth be small, caustic will of course suffice, but it should be freely used, and so as to attack some slight portion of the healthy tissue to make sure that *all* the morbid tissue is destroyed. If the growth be extensive, the knife should remove it freely, but by all means should a layer of caustic be subsequently used to secure the death of any stray particles or masses of the foreign growth. But even in the cases of persons in good health, of whom we are speaking, I hold that if the growth, and especially the edges, be very hyperæmic, it is better to attempt by simple astringents and exclusion of air to allay the hyperæmia before attempting to destroy the local disease; because I hold that diseases have a tendency to return—and likewise oftentimes to spread in cases where removal unfortunately happens to be incomplete—in direct proportion to the degree of hyperæmia of the boundary line between the healthy and diseased tissues. There is still a third class of local diseases that call for local treatment mainly—viz., parasitie diseases. The mode of using parasiticides in cases of animal parasitic disease is simple. It is easy to do too much even here, and to apply the remedies to the wrong place. Sulphur in scabies is frequently used too freely, and for too long a time, so that long after all acari are killed, the parasiticide is applied to increase the accompanying follicular irritation, and to set up urticaria, eczema, and the like. In phthiriasis the lice and their ova are in the clothes, which require to be baked; not in the body, which only needs a good washing or two, and not parasiticide treatment, which only keeps the lice from attacking it, and does not destroy them. With regard to vegetable parasitic disease, much that is special must be done, and the difficulties of treatment are great oftentimes, but I shall refer to these matters with special minuteness under the head of tinea.

CLASS II.

I now come to speak of what I have termed the mixed class of cutaneous affections, the components of which are very numerous—*i.e.*, those which are essentially local, but are influenced by the state of the system at large. These demand for their relief a judicious combination of general and local treatment. In many instances, a disease excited by a local cause—*i.e.*, intertrigo, eczema simplex—occurs in a badly nourished subject; and the mal-nutrition of, or mal-elimination in, the patient prevents the progress towards cure, which should, if regard be had to the local mischief itself, speedily happen. There are one or two special points in the therapeutics of these cases. I may say generally that in the early stages of these diseases the proper treatment is that which we adopt for pyrexial diseases in other parts of the body, and it is subsequently such as is of a tonic nature, and finally that which is calculated to remove chronic inflammatory thickening or the like. But there is something more than this to be considered. It is not enough to adopt a treatment recognised as suited to a particular disease. There are a number of influences that modify disease in different subjects, and that require to be carefully attended to. These influences are of very common operation, and arise out of the peculiarities of the patient. The dermatologist must determine not only what is best for individual cases, but how far the specific or formulated treatment for particular diseases should be added to, or modified, to suit these diseases in particular individuals. In fact, the treatment of the cases of skin diseases now under notice should be a combination of the remedies suited specially to the particular disease present, with those suited to the concomitants of the individual case. The following are the modifying influences to which attention should be given.

Firstly.—It is important to recognise the great influence which scratching possesses in exaggerating certain diseases. Nothing is of more consequence than the use of special remedies calculated successfully to allay the irritation which forces the patient to scratch; and to protect and to soothe the parts when scratched.

Secondly.—The influence of general debility is at work not only to retard recovery in, but to favour the development of many diseases to a more severe degree than would otherwise be the case. It is not a question of debility *producing* this or that malady, but *modifying* the same. The debility may express itself mainly in the form of anæmia, want of nerve power, &c.; and special and appropriate remedies given with a view to meet these several states will lead to an improvement in the general health, and thus indirectly favour the cure of any diseased condition about the skin; for it does not need any proof from me that the nearer a man approaches in his condition the standard of health, the sooner and more certainly will he throw off any disease about him, be it in his outer or inner surface or parts. But in practice I do not forget that the specific should be linked with general treatment. Now the relief of the debility of persons afflicted with diseases of the skin is to be accomplished not only by the use of medicines, but by mental and bodily rest, change of air and scene, and the like. These matters are by no means sufficiently considered.

Thirdly.—Every attention must be paid to dyspepsia as affecting the origin and course of skin diseases. It gives rise, of course, indirectly to debility, to torpid action of the liver, to the generation of acridities that float about in the blood, and circulate freely through the skin to disorder it; and lastly, it increases cutaneous hyperæmia by reflex action. Dyspepsia must therefore be regarded as a powerful intensifier of all hyperæmic states.

Fourthly.—The circulation of retained excreta is always a cause of intensification of hyperæmic conditions. The blood charged by excreta, in passing through an eczema or a psoriasis, will irritate it, if I may so say, and thus necessarily tend to give it an inflammatory character, whilst the progress towards cure will be retarded. I believe this to be one of the most important of all points to be attended to in treating diseases of the skin, and the principle is of almost universal application. It is a matter of common sense (but matters of common sense are apt to be very much neglected) that a poisoned blood-current—poisoned—*i.e.*, "charged," with bile or nitrogenous matters which necessarily disorders the tissue nutrition and vascular supply—will not permit the cure to be accomplished so easily as if the blood were uncharged with the same elements; and the removal of the latter will help the cure of disease, and that oftentimes in a marvellous manner. Now, whence come the excreta in the blood? From (*a*) defective assimilation, as in dyspeptics, torpid liver action, and from excessive waste; or (*b*) from defective excretion, by the skin, the kidneys, and the liver. The skin has to get rid of a certain amount of effete products; and if the skin acts sluggishly or scarcely at all, this may impurify to some degree the blood-current. So, again, deficient kidney action tells its own tale. The non-excretion of bile products in the usual way, and their passage into the blood-current to circulate within it, is another cause of skin mischief, as in some cases of erythema, urticaria, and probably purpura. The severest case of general eczema I ever saw was excited by the circulation of bile through the skin in connexion with a most marked attack of jaundice. Of course in such a case the influence of the retention of the non-eliminated products is easily appreciated, but in other cases readily overlooked. There are minor degrees of blood-impurification by bile, urea, and the like. It seems to me that the treatment of diseases of the skin is essentially the physician's work, and not the surgeon's, for the very reason of the connexion between skin maladies and functional and structural changes in internal organs.

Fifthly.—Deficient renal action, particularly in reference to the quantity of fluid discharged, is another matter of prime moment in regard to skin diseases. I am convinced that we do not, when the skin is disordered, sufficiently make use of the kidneys to relieve the skin of its work. There are three conditions in connexion with diseases of the skin in which the kidneys should be freely stimulated to active excretion of fluid :—(1.) Where, in consequence of organic disease of the heart or other cause, and in connexion with a sluggish circulation, there is a distinct tendency to fluid accumulation in the tissues. (2.) In all cases of hyperæmic skin disease, and in the early stages of inflammatory diseases, where the blood tends to accumulate in the skin in connexion with pyrexia. And (3.) In diseases of the legs, where there is the slightest tendency to local or general œdema. In inflammatory diseases of the legs diuretics greatly counteract the injurious effects of mere gravitation, and they tend to relieve the engorged tissues. Diuretics are useful under all these circumstances, and emphatically so where the quantity of urine is already deficient. But I hold that in diseases of the skin generally a deficiency of urine calls for free stimulation of the kidneys to relieve the disordered skin of its work as much as possible. Of course where there is *free* circulation with the blood of retained excreta the necessity for free kidney action is increased tenfold. The liberal administration of diuretics in a case of eczema of the legs in a gouty subject will often act like magic when all other remedies fail.

Sixthly.—Gout and rheumatism have their special influence upon skin diseases. I might have referred to these modifying influences under the last head, for it is the excess of uric acid in the one and the presence of lactic or an allied acid in the other case, and the circulation of blood charged with these products through the skin, that cause special mischief in skin diseases, *and give an inflammatory or irritable aspect to them.* The older practitioners, in attributing to gout and rheumatism the causation of diseases which we now deem independent of them, were even nearer the truth than are some modern observers who put excessive faith in the local origin of disease. If gout does not *produce,* it often *modifies* skin mischief, as above stated; and, after all, our forefathers were only at fault in regard to the use of terms. It is not an uncommon thing to find this or that eczema or psoriasis or lichen called gouty eczema, gouty psoriasis, gouty lichen. Practitioners have found that by treating patients affected by these forms of disease as gouty or rheumatic, as the case may be, the maladies have often speedily vanished when other measures have failed. They have imagined that the gouty blood has caused the disease. It would be more correct to say it modified, aggravated, the disease, and so prevented the cure from taking place. With this explanation there can be no difficulty in seeing that gouty and rheumatic dispositions exaggerate hyperæmic conditions in skin diseases, and give an inflammatory aspect to them very frequently. The removal of gouty influences must aid the cure of skin diseases.

Seventhly.—The tuberculous and the strumous diatheses also, it must be remembered, considerably modify certain skin diseases. The tendency in the phthisical and phthisically inclined, and in the strumous is to a particular perversion of cell-growth in certain of the tissues, and notably the fibro-cellular: I refer to the tendency to the production of pus. Now it will be readily understood that this must have much influence upon local tissue-change in skin diseases. Given the occurrence of a local inflammation in a non-strumous and a strumous subject, there will be differences in the two instances, accounted for by the operation of the pus-producing tendency in the one and not in the other. The tendency to the pus-production, which may not have shown itself in action before, will be likely to do so when nutrition is disturbed by local inflammation, disordered innervation, &c., as the case may be. The strumous tendency takes occasion by the perversion of local nutrition to give evidence of its presence and to complicate matters. Of this fact experience assures us. Take the case of an eczema: if it occurs in a strumous subject, it is accompanied by free pus-production. Acne in a non-strumous and acne in a strumous subject are different. In the latter case, the fibro-cellular textures of the wall and about the gland are implicated and inflamed, often presenting the appearance of the livid-red and indolent tubercular swelling of a strumous tubercle, whilst the acne spots suppurate freely and leave behind scars, indicative of the tendency to ulceration, which is another feature of the strumous habit. This is a simple but it is an important point in therapeutics, and, because simple, often disregarded as of no moment. In psoriasis in strumous subjects, the tendency to the production of pus is seen, and in this statement I am confirmed in my original opinion by my friend Dr. R. W. Taylor, of New York, an excellent observer and worker. Therefore, in regard to phthisical and strumous subjects, whilst one treats the local disease, be it eczema, erythema, lupus, acne, or psoriasis, it is of great use to neutralize, by the conjunction of anti-strumous remedies, the bias of the general nutrition towards free pus-production, which will of course express itself in proportion as the diathesis is marked and the local derangement of nutrition severe.

Eighthly.—An old syphilitic taint is to be carefully detected and dealt with in reference to skin diseases. This should be recognised as a distinct and special *cause* of *chronicity* in certain *non-syphilitic* eruptions. The tendency of fully-developed syphilis in the human subject is to produce a new growth in the fibrous textures, or to give rise to a modification of the normal cell elements of these parts. The altered or new tissue we call "granulation tissue." Now, when syphilis modifies ordinary skin eruptions, it does so by impressing upon them more or less of the characteristic tissue change it ordinarily produces, and in doing so may antagonize to some extent diseased processes peculiar to the disease which it modifies. Eczema may illustrate what I mean. The characteristic of eczema is the occurrence of serous catarrh in the papillary layer of the skin as the primary condition; but if eczema occur in a syphilized subject, and the syphilis be active, then the tendency of the syphilis towards the formation of the granulation tissue may show itself, and the "serous effusion" may in part give place to the formation of new tissue—*i.e.*, the two processes may be more or less intermingled, or rather, I should say, the result is a compromise. This is exactly what I should be led to expect from an examination of the naked-eye characters of eczema in a syphilitic subject. There is less discharge and more thickening than usual, and than I should be led to anticipate. So in psoriasis there is more thickening, less scaliness, and less vascularity, because the syphilitic tissue invades and presses upon the vessels in the normal tissue. Hence the effect of syphilis on ordinary skin diseases is to render them less typical in regard to naked-eye characters and to their course, because the additional element of syphilis retards the cure, whilst there is the superaddition of the element of "thickening" or "deposit" (granulation tissue), which is not explained as a mere sequence of hyperæmia or the like.

Whenever I meet with a case of *unaccountable* chronicity I suspect that a syphilitic taint is in the background; and, for my own part, I believe that syphilis is a modifier of disease in local inflammations to a greater extent than has yet been expressed in any writings. Syphilis does not give evidence of its presence in these skin affections until some strain is put upon the nutrition of the tissues, and then an explosion takes place. A strain is put upon the nutrition of the skin when a local inflammation occurs, the normal resistant power of the skin is lessened, and the syphilis, taking occasion by the weakness, shows itself in action as a modifier of the inflammatory process as above described.

"Chronic inflammatory thickening" is a matter upon which a few words must be said. In some cases this condition is found to be developed out of proportion to the degree of antecedent hyperæmia both as regards its severity and its duration. My own belief is that in such cases it is to be explained by the existence of the strumous diathesis in the individual concerned, which often at once accounts for the infiltration of the fibro-cellular tissue with a low type of lymph, or the formation in it of a new tissue of a less perfect kind. At other times an old syphilitic taint may best explain the occurrence of thickening. At all events a mercurial course sometimes does wonders, as all know. Of course long-continued hyperæmia in a person free from the two diathetic tendencies named, will lead to "chronic inflammatory thickening." I am now particularly referring to cases in which thickening and induration either rapidly show themselves; or in such a manner as to strike us that it is due, to some special tendency in the textures to hypertrophy, rather than to the hyperæmia itself, because this has been but slightly marked.

Ninthly.—There is a class of phenomena connected with reflex action which it is of some moment to pay attention to in treating skin diseases. He who would deal with the matter scientifically must never concentrate his attention solely upon the mere local changes in these diseases, but must especially be on the alert to discover, in disturbance of the nervous system, the frequent reason of the intensification of hyperæmic conditions in the skin. I have seen not infrequently a redness of the skin produced by mental excitement or sudden fright in "nervous subjects;" and there can be very few who have not known an eczema rubrum made immediately very much worse by the same influence. Depression and mental excitement play great parts in aggravating hyperæmic conditions of the skin. That uterine mischief occasionally intensifies acne rosacea, that dyspepsia frequently makes acne much worse, and the like, are facts belonging to the same category.

Tenthly.—The hygienic surroundings of patients must always be carefully taken into account in the treatment of diseases of the skin, in reference especially to the class of cases particularly under consideration now. It is in this respect that the treatment of hospital and private patients of the better class differs so much. The confined living-rooms, the breathing of impure air, the defective diet, and the neglect of cleanliness, are influences that aggravate skin diseases in the poor as compared with the rich. It is cleanliness and feeding up, with fresh air, that the poor want, in many cases of disease which would be relieved by purgatives and alkalies and nervine tonics amongst the better classes.

Now the several modifying influences referred to under the foregoing heads may be present in different combinations, and it is the full recognition of this fact that leads to success in the treatment of skin disease.

I now turn to the general principles of local treatment. The diseases to which I am now referring are, it will be remembered, the hyperæmias, the simple inflammations in the debilitated, eczema, ecthyma, psoriasis, acne, pemphigus, &c. I am the advocate for a much more soothing system of treatment than that usually adopted for these diseases, of which hyperæmia is so frequently a part. And this leads to the question, What should be the object of our local measures? It is threefold: (1) at the outset, to *moderate* diseased, especially inflammatory, action; (2) to *protect* the diseased, and therefore weakened, parts; and at length (3) to *stimulate*, with the view of rousing the dormant tissues into due activity, and causing the removal of morbid depositions and formations. My own conviction is that, in the early stages of hyperæmic skin diseases, much of our current treatment is mischievous by reason of its activity. A soothing plan of treatment is wanted in all cases of early cutaneous congestions. By soothing treatment I mean one which diminishes congestion and secures an exclusion of air—one which, in fact, puts the skin in a state of rest. *Heroic* measures, designed to cut short an early congestive stage of a skin disease, often render the course of that disease chronic and persistent. In the early stages before the deep vessels are involved, much can be done to check congestion by mild applications; whilst active measures do harm. For instance, in acute general psoriasis I have often seen aggravation of the congestion follow the use of tarry applications; while great relief has been produced by alkaline and bran baths, and subsequent oiling of the surface. I am not by any means the advocate of an expectant plan of treatment. I advise potent remedies to be employed after the congestive stages have passed. The dangers of over-stimulating are not imaginative; and they are plainly made apparent, in cases accompanied by active hyperæmia, by much irritability, or by a tendency to degenerative change in the skin, in the spread of the disease, and its undue chronicity.

Now for the details of local treatment.

First, as regards *moderating* inflammatory action. It will naturally occur to any one, first of all, to remove special causes of local irritation in the case of hyperæmic skin affections. There are two sources of mischief I may specially refer to; they are (*a*) the wearing of flannel next the irritable skin, and (*b*) scratching. I think flannel should never come in contact with an irritable skin; it is a great source of irritation. It may be worn outside a linen garment, and the patient will not, under such circumstances, catch cold. The disuse of flannel is important in nettlerash, pruritus, eczema, scabies, the erythemata, &c. Scratching does an infinity of mischief. The usual plan for preventing it is to use some sedative lotion. I think it of great importance to employ emollient and alkaline baths freely, to allay irritation in the early stages of local inflammatory cutaneous diseases, and to subsequently protect the parts by appropriate coverings and applications; and by internal remedies to remove all cause of pyrexial disturbance, or alter such blood impurifications as lead to an intensification of the hyperæmia of the parts through which the blood passes. The baths which are best adapted to moderate inflammatory or irritative action in the skin are bicarbonate of soda, 2 to 4 ounces, size from 4 to 6 or 8 lb., poppy, and bran. The patient may remain in for ten minutes or so, and the skin should not be rubbed dry, but patted with hot towels. It is a good plan to oil the skin subsequently, or to powder it with oxide of zinc, or to apply a simple calamine lotion. But care must be taken to use such means in fit conjunction with general remedies. If bile products or ureal compounds are in abundance in the blood, free purgation, or diuretics employed with a liberal hand, must not be neglected. Pyrexia must be met with appropriate drugs and dieting. In like manner the pain and hyperæmia of an eczema in a gouty subject may be greatly moderated by an alkaline bath, but a good dose of colchicum in addition will bring the greatest relief. The exclusion of air from inflamed and hyperæmic irritable parts is a matter of great consequence, and the more so if the irritable part is denuded of cuticle. The air is very stimulating to such parts; absorbent powders and neutral unguents are here called for. Then it is also very desirable to prevent evaporation taking place from scratched surfaces, or surfaces denuded of their natural protecting layer of healthy cuticle, for thereby they become harsh, hard, and tend to crack. I know nothing so good for the purpose as the old "Kirkland's neutral cerate."

I do not know that I can find a better place to make one reference to the use of water-dressing to indurated and irritable parts, made all the more troublesome by scratching. There can be no doubt that the use of a water pad, which permits the diseased surface to absorb moisture and so become more or less soft and supple, does give great relief; but this is oftentimes succeeded by the recurrence of itching, pain, and it may be, increased cracking and stiffness or tension. The explanation is not difficult to give in regard to some cases at least. The part has become denuded of its cuticular covering, and, whilst it absorbs moisture freely, it also parts with its moisture equally freely unless prevented. Whenever I use water-dressing to an excoriated part, I invariably direct that a layer of greasy matter shall be applied, and kept applied, on the removal of the compress. In this way the absorbed moisture is retained, and the parts keep more or less soft.

But I am touching upon the second point—viz., the *protection* of hyperæmic and irritable parts; and, indeed, to *protect* is, under such circumstances, to *moderate* diseased action. In order to protect it is necessary to prevent scratching and also the access of the external air to the part: to secure rest, as it were, to the diseased parts; and to negative the operation of special external irritants. In addition to the use of absorbent powders and neutral unguents, one may employ cotton-wool, bandages, and strappings, which I need not now discuss at any length. The use of bandaging and strapping is particularly to be commended where the effects of gravitation are noticeable—in the legs, for example. The bandage prevents undue distension of the vessels and the escape of serosity into the textures, thereby giving the parts a better chance of recovering their tonicity. This simple matter is much neglected in regard to cutaneous diseases. Not only in the leg, however, but in other parts bandaging and strapping act similarly, where the tendency to engorgement of the tissues and vessels is shown.

The third object of local treatment in the diseases with which we are dealing is *stimulation.* One of the chief things the dermatologist should set himself to determine is the exact time at which his soothing kind of treatment should cease and his stimulating remedies be employed. It is at the moment that the irritability of the blood-vessels and the nerves is subsiding that the use of powerful astringents and stimulants is so efficacious, and that it is possible to do the most towards a speedy cure of disease. What happens in the inflammatory eczema, the acne, or the psoriasis? After a while, the vessels lose their tonicity and become dilated, favouring the "effusion of inflammatory products," giving rise to œdema, "chronic inflammatory thickening," &c. Now, it is at the moment that the parts are becoming less inflamed and irritable that astringents, lead, zinc, nitrate of silver, mild mercurial preparations, and the like, are of use to restore to the vessels their tone. And if at the same time the general remedies assist nature by removing impurities from the blood, by restoring the balance between absorption and excretion especially of the watery matter of the system, and giving general tone to the body, the patient will probably get rapidly well. The application of sulphur at the indicated nick of time speedily cures an acne that had been irritated before by the same remedy. The same may be said of the use of nitrate of silver to an eczematous patch. The use of tar to a psoriasis which is markedly hyperæmic at a very early stage will often spread the disease, or bring out fresh places. If matters still do not mend, but the disease holds on, one needs to stimulate, or, as we say, "rouse the torpid tissues to activity," but as I should put it, to quicken the activity of the absorbents in order that effused and formed products may be removed. It is really not so much in chronic inflammatory skin diseases that we need fresh remedies, as to use those we have, reasonably, as regards time and circumstances. This is emphatically so as regards eczema and general psoriasis. But what are the indications that local soothing remedies are still needed in a disease, and the time has not come for stimulants? I think the main ones are as follows:—The tendency of the hyperæmia or the disease to spread; the development of new spots of disease—showing the disposition to the implication of healthy parts—which would be favoured in its development by anything which irritated such parts; the presence of much pain or heat in the parts; but more especially marked hyperæmia. But I lay most stress on the two former features. I like to let hyperæmic conditions in skin disease "quiesce," as it were, before I leave off my soothing treatment. But a disease having "quiesced," its hyperæmic condition having diminished, and the disease showing no tendency to spread or to spring up in new places—*e.g.*, in acne, eczema, psoriasis, and pemphigus—then stimulation can be appropriately adopted. And for what reason are stimulants used? First, to restore the tonicity of vessels; and one must not forget here that artificial pressure by bandages, &c., is a great assistance where gravitation comes into play to distend the vessels, as about the legs. Secondly, to alter the character of a discharging surface. Such is the action of a weak mercurial ointment in a case of chronic eczema. Thirdly, to check the formation of scales, as in the use, against psoriasis, of tarry preparations; and fourthly, to cause the absorption of inflammatory or heterologous formations; the iodides, mercurials, the soap treatment, blistering, and the like are specially referred to under this last head. But in regard to the use of stimulants and revulsives, I hold equally, as concerns their application, that their efficacy will depend greatly upon the judicious conjunction of internal remedies. I mean that, supposing that the blood of a patient in whom these external means are used is charged with uric acid, he will have a much smaller chance of gaining benefit from the application of revulsives than one who has a pure blood-supply passing through the diseased part. In the former the blood-state may take occasion, by the unbalancing of the nutrition induced by the use of the local remedies, to increase the hyperæmia, or to set agoing an inflammatory action again. The success of stimulant applications, in fact, will be in direct proportion to the degree in which the individual's condition approximates that of health. One very potent method of stimulating not only the skin but the system generally, and emunctory organs in particular, is the use of sulphur or sulphuret of potassium baths. They should not be employed in the acute stages, but in the chronic forms of psoriasis, eczema, lichen, and acne. Where there is not much irritation or hyperæmia, and where the latter does not seem to be readily increased, they are most useful.

CLASS III.

It is scarcely necessary to enter into detail as regards the components of this class, including the strumous, the leprous, the syphilitic, and neurotic diseases. The general treatment is all-important, but it has nothing special about it. It is specific in so far as cod liver oil is our sheet anchor in the strumous; iodide of potassium and mercury in the syphilitic; arsenic, iron, strychnine, quinine, and the like in the neurotic cases; but it may be shortly described as consisting in the use of general tonics. Locally, little is needed to be done saving getting rid of exuberant granulations in strumous cases by astringents, and using absorbents, such as weak mercurials, to syphilitic and leprous growths. I have fully dealt with these several matters in detail under the head of particular remedies.

Summary.—From the foregoing observations I hope it will be evident that the treatment of skin diseases consists in something more than the prescription of arsenic. The invariable answer I obtain to the question, "Why do you give arsenic?" is this: "Well, you know one does give it!" or "What else can we give?" I have attempted however to show that it is impossible to formulate a particular treatment suitable for all cases of any one disease—to say this or that man has this or that disease, and therefore must have this or that treatment. Most cases require a combination of medicaments, suited not only to the disease itself, whatever that may be, but also to varying individual peculiarities in the patient, and concomitant circumstances. I think it needs the knowledge and tact of the physician to make such a combination a happy one. Further, I have especially dwelt upon the need of a more soothing and a less stimulating plan of treatment in the congestive stages or phases of all cutaneous disorders.

CHAPTER VII.

THE ERUPTIONS OF ACUTE SPECIFIC DISEASES (ZYMOTIC)—WHICH ARE OF CONTAGIOUS NATURE, OF DEFINITE COURSE AND DURATION, ACCOMPANIED BY FEVER, THE RESULT OF POISONING OF THE BLOOD BY SPECIAL VIRUSES—ONE OF THE EFFECTS OF THIS POISONING BEING THE DEVELOPMENT OF CERTAIN CHARACTERISTIC ERUPTIONS ON THE SKIN.

The eruptions which call for notice under this head need not be discussed at any length. I think it necessary to give a short summary only of the eruptions themselves, for diagnostic purposes.

VARIOLA, OR SMALL-POX.

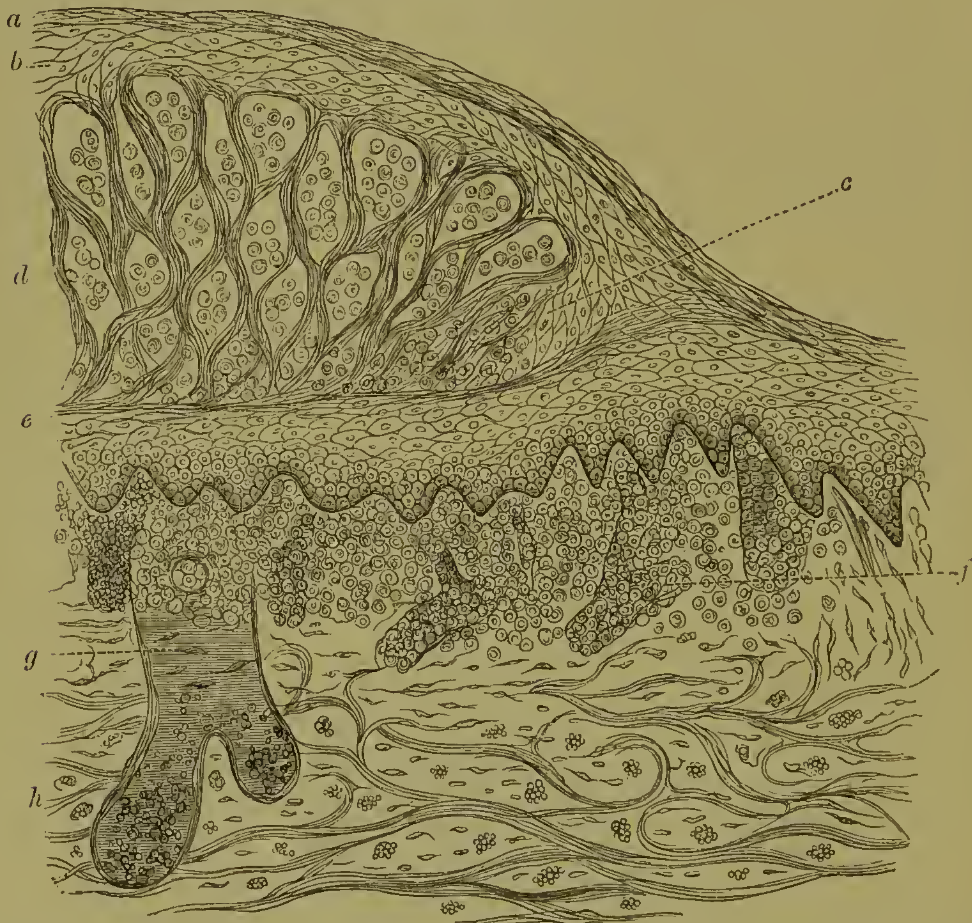
The eruption in the skin is characterized by the appearance of bright, red, hard acuminated points, the size of hemp-seeds, distinct from each other at first, and which, passing through the stages of vesicular and pustular inflammation, arrive at their maturity on the eighth day of eruption. The individual pustules then scab, their contents drying into brown masses, which become detached in from twelve to twenty days, and leave behind in their place permanent cicatrices, or "pits." Small-pox is often preceded, as regards its local state, by more or less erythema, which subsides on the appearance of the vari. This has been termed *erythema variolosa.* Small-pox is said to be *discrete,* when the pustules are scattered over the surface; *coherent,* when the eruption is plentiful, and the *vari* are "closely packed side by side but still distinct;" *confluent,* when they run together; *modified,* when the disease succeeds to a prior attack or occurs after inoculation. The disease is also primary or secondary, in relation to the number of attacks in a given individual. Variola sine variolis is the name given to small-pox when the pyrexia proper to it occurs, but when at the same time this febrile state is unattended by eruption. The mucous surfaces are affected in like manner to the skin. Small-pox is, by universal consent, divided into five stages,—*firstly,* that of incubation, which is reckoned by the length of time which elapses between exposure to the poison of the disease and the development of the first effects (it varies in duration from 5 to 20 days—Dr. Marston, of the Small-pox Hospital, says its average is 12); *secondly,* the stage of invasion (2 days); *thirdly,* that of eruption; *fourthly,* that of suppuration; and *fifthly,* desiccation.

The "Period of Eruption."—Eruption makes its appearance on the third day after the first occurrence of constitutional disturbance, and travels over the entire body within a day, when the febrile condition is greatly relieved. The spots appear first of all on the face, about the forehead, and thence they extend to the trunk and limbs. These spots are, in the very outset, small papules, red, hard, and pointed, and their more or less closely packed or scattered condition affords a good guide as to whether the disease will be confluent or not; if the skin be very red and erythematous, probably the case will assume the confluent form. On the second day of eruption—fourth of disease—the papules formed from elevation of the epidermis by an increase of the *cells of the Malpighian layer* and *distension* of the *vessels* in the true skin, but particularly the papillary layer, are transformed into vesicles. If these vesicles be punctured, nothing escapes from the puncture. Now at this stage there is a network of fibres in the rete formed by stretched and elongated cells of that layer, the meshes being filled with pus cells, the papillæ being flattened down. On the third day of eruption—fifth of disease—umbilication commences as a central depression, which becomes more marked every day, *pari passu* with suppuration, which now commences; the pustules are "whitish and surrounded by an inflamed areola;" the fourth day of eruption (sixth of disease). If the contents of the pustule are now turned out, a little "disc" of dirty plastic matter, presenting an umbilicated shape, and attached to the cutis beneath, will be noticed. At this stage pus cells infiltrate the corium more deeply, but the main collection is encapsuled as it were by two layers of the rete cells, which are flattened out more or less above and below, the intervening cells being stretched out into fibres, forming a network as above described. In the confluent form these various changes are not distinctly traced. It is not at all unusual to observe the confluent in one, the discrete form in another part of the same subject. The onset of *maturation* is observed about the end of the fifth or beginning of the sixth day of eruption, or the eighth of disease. The contents of the umbilicated vesicles soften down into pus, the umbilication diminishing with enlargement of the base of the pustule, and a yellow colour replacing the white. Maturation, as it is called, is "complete on the eighth day of eruption," or the tenth of disease; between the eighth and eleventh day, or the tenth or thirteenth of disease, *secondary fever* sets in, when the stage of *desiccation* is reached. This is the period of recovery or resolution, when the local and general symptoms subside, the scabbing dries, and the discharge ceases. The crusts fall off in the next three or four days (fifteenth day of disease), exposing raw, red surfaces, which desquamate, and by-and-by leave behind red-looking marks, which gradually fade and assume the well-known aspect of small-pox marks.

When small-pox is produced by inoculation there are some differences. On the third day the puncture is inflamed, it is itchy, and surrounded by a little blush of redness, whilst the spot is slightly indurated; on the fourth or fifth day the central point acuminates, and a little coming vesicle is seen; on the sixth day there is an early state of pustule, and it is umbilicated; on the seventh day a perfect pustule is formed with an inflamed areola; on the ninth or tenth day, maturation takes place, and the umbilication of the pustules goes; from the twelfth to the fifteenth day, desiccation takes place, and from the twentieth to twenty-fifth day the scab falls off. The disease is rarely confluent.

In dealing with vesicles and pustules under the head of elementary lesions (chapter iii.), I gave a general sketch of the changes that take place in the tissues in small-pox, and the accompanying representation of a small-pox pustule, after Auspitz, taken in connexion with the sketch and the remarks above made, will enable the reader to form a good idea of the morbid anatomy, not only of variola, but also of parenchymatous inflammation in general.

Fig. 8.



Vertical section through half of a pustule in process of retrogression (250 diam.) (*Auspitz*). *a.* Old epidermis. *b.* Rete Malpighii covering the meshwork. *c.* Swollen lateral cells of the meshwork. *d.* Meshwork with enclosed pus cells. *e.* Newly formed epidermis. *f.* Vessels surrounded by cells. *g.* Part of a sebaceous gland. *h.* Corium.

DISFIGUREMENTS, ETC., AFTER SMALL-POX.

The advice of the dermatologist is not infrequently sought for the removal of certain disfiguring consequences of small-pox about the body.

In the first place redness of the face has to be dealt with therapeutically. This may be rendered much less visible by the use of some mild astringent, but the greatest care must be taken to avoid every application which could in any degree increase by stimulation the hyperæmia. A calamine lotion is as good an application as any (see Formulæ, No. 117). It should be used after bathing with hot water, being dabbed in and allowed to dry. Scarring cannot in the nature of things be prevented, though by letting out the pus from the pustules, or aiding in the solidification of the pus, the degree of scarring may be much lessened. If the scars become the seat of hypertrophous growth of cicatricial tissue—a species of keloid developing—the knife must not be used to these cases, but the frequent application of contractile collodion had recourse to. It should be applied twice a day for some time. The formation of warty projections in the face calls for notice. These are hypertrophic growths of the fibrous texture, resulting from the inflammation of the tissues, and can be nipped off with the scissors, or destroyed by acid—such as the acid nitrate of mercury; but the use of such a remedy requires care.

Acne spots may also develop about the nose, for which the ordinary treatment for acne should be adopted.

In some cases enlargement of the sebaceous glands, by the retention of secretion in them, owing to the mechanical obliteration of the follicular passage, occurs, and then what is termed *variola verrucosa* is present. It may be destroyed by caustic.

Eczema following small-pox should be treated in the usual manner.

MODIFIED VARIOLA.

The effect of vaccination is to lessen the severity of variola, and the latter occurring in vaccinated subjects is called modified small-pox.

There are differences of opinion as to whether there is any relation between it and varicella. The distinction of varicella (vesicular), modified small-pox (varioloid, as it has been termed), and variola is well marked in the extreme degrees of either disease, but they shade the one into the other by insensible stages. At times cases are met with which may be called either variola or varioloid—indeed it is not uncommon to observe the vesicular in conjunction with the umbilicated form; at other times an eruption is simply papular and scarcely reaches the vesicular stage, yet is traceable to the action of the small-pox poison. Varicella has been regarded as small-pox modified by vaccination, but there is good reason to look upon it as a distinct disease.

In modified variola, as compared with true variola, the secondary fever is absent: the only stages present are those of primary fever and eruption. As a rule the pyrexial symptoms partake of the character of those of variola, but they are of less severity. The eruption may be papular; in this case it behaves in the same way as that of variola at the outset, only it is abortive at the papular stage, and in a few days the papulæ subside; there are a few vesicular and pustular spots generally about the face. At other times the vesicular stage is reached, and lasts five or six days, and, as in the papular variety, there are a few pustular spots on the face. In more marked instances, the modified variola is pustular, and the pustules may be globular (the varicella globularis of Willan, and swine-pox of old authors) or umbilicated, or the characters of these two varieties may be intermingled with those of conical vesicles. In other words, modified small-pox may abort in any of the stages which are passed through by ordinary variola.

VARICELLA.

This is a disease of children. After pyrexia lasting a few hours, or not more than a day, the eruption of varicella appears, often on the back first of all, as distinct red papulæ, which become vesicular in a few hours: the eruption is successive during three or four days. The same kind of changes occur in the eruption as in variola, but the disease is more superficial, and the vesicle is unilocular, and it is not generally umbilicated; the contents are serous rather than puriform. On the first day the vesicles are transparent; opalescent on the second and third; on the fourth they shrink and desiccate; and on the sixth the scabs fall off. Sometimes, however, the contents of the vesicles become puriform. The general pyrexia is slight.

Varicella is diagnosed from the vesicular variety of modified small-pox, by the less severity in the antecedent pyrexia, the absence of the "shotty" feel of the eruption in its papular stage, the rapid formation of the vesicles, the absence of much inflammatory local hardness, the successive crops of the eruption, its commencement on parts other than the face, the absence of pitting, the superficial character and the shortness of the course of the disease, and the absence of secondary fever. The disease is over in a week or so.

INOCULATED VACCINIA, OR VACCINATION.

Course.—On the third day after vaccination there is seen a slightly red point if a puncture has been made, and a red line if a scratch has been made, at the seat of operation. The part is also slightly elevated. On the fourth day these signs are found to have augmented, and the *papular* stage has been reached, and this coincidently with the development of distinct local inflammation, accompanied by pruritus and irritation. The edges of the wound are everted, thickened, inflamed, and hot, with a commencing blush of redness around them. The disease may now abort, but usually on the fifth day the epidermis is raised so as to form a vesicle, which is well formed on the sixth day, when it is of a whitish colour, of circular form, and exhibits commencing umbilication in the centre. The vesico-pustule attains its full size on the eighth day (fifth of eruption). It is then distended but flattened at the top, whitish, and surrounded by a red areola, and more or less induration; the parts around now become irritated, tense, brawny; the glands enlarge, whilst the blush of inflammation extends oftentimes to the shoulder, or down the arm itself. On the ninth day the umbilication is lost, and the pock is getting pustular. If the vesicle is punctured, around the edge especially, a transparent fluid exudes. On the eleventh day, the blush of inflammation begins to subside; the contents are markedly pustular, and the stage of desiccation commences. Up to this period the vaccine vesicle is chambered, so to speak, into separate cells; these now open the one into the other, and form one large pustule; the desiccation advances from the centre in the next few days (12th, 13th, 14th) towards the circumference; the crust also dries, so that a dark, hard, dry, shrivelled scab remains; the redness has in great measure gone, but there is a lividity about the vesicle; the crusts separate from the seventeenth to the twenty-fifth day, leaving behind cicatrices, at first of darkish colour, but which soon fade in colour, but are permanent. Mr. Wilson recapitulates thus in regard to the stages of the disease:—First two or three days, *incubation*; 4th, *papular*; 5th to 8th, *vesicular* (umbilication); 8th day, *areola*; 9th to 11th, *pustular*, umbilication lost, areola enlarged; 15th to 17th, period of *separation*.

Eruptions following Vaccination.—Amongst other things erysipelas may be noticed. The only point calling for comment in regard to it is the desirability of evacuating the contents of the pustules as soon as possible, and freely incising the tissues around the seat of mischief, if there be much tension, brawniness, or threatening suppuration. Sometimes an eruption makes its appearance on different parts of the body immediately after or coincidently with that of vaccination, and partakes of the characters of vaccinia. This has been termed *vaccinola* and "bastard vaccinia." Neumann states that the contents of the vesicles, when introduced beneath the skin of a healthy person, "produce varicella or varioloid." Of this particular fact I have had no personal experience, though I have observed cases of vaccinola, which, I think, implies that the activity of the virus does not cease with the period of desiccation in vaccinia. The treatment of this latter affection is that of vaccinia. Eczema in different forms may follow directly upon vaccination, and then the subject attacked by it has been generally either badly nourished, or bad hygiened, or is strumous.

Where the eczema is slight, there is no difficulty in curing the disease by the use of such simples as zinc ointment, and a few mild aperient doses followed up by a little tonic. But in some cases eczema more or less general follows vaccination, and then I regard the patient as one in whom a constitutional predisposition to the disease has already existed, the disease being excited merely by the vaccination, and its attendant disturbance of nutrition. In these cases the eczema may begin about the seat of the actual vaccinia, and spread away from thence over the body, or it may crop up in different parts of the surface. In either case the symptoms are those precisely of a chronic eczema, with a thickened harsh skin, which is oftentimes very irritable. The treatment is that of chronic infantile eczema. *Contagious impetigo* and furunculi occasionally follow vaccination; and lastly, vaccinal syphilis. Now I do not think it at all necessary to enter into a lengthy disquisition upon vaccinal syphilis. Unquestionably it does occur, for I have seen it myself. But it never occurs where unadulterated lymph is used, and only where the lymph is impurified by admixture of actual syphilitic pus or blood. When “vaccination is performed on a healthy person with lymph from a vaccinated syphilitic patient, and blood is mingled with the matter, then, instead of a vaccine pustule being developed, there is an infiltration which shows clearly the character of the ulcus induratum” (Neumann). The guide then to syphilitic mischief is the fact that the vaccinia does not run a typical course, and that induration or unhealthy ulceration occurs at the time that desiccation and healing should rapidly take place; the ulceration and induration taking on it may be a serpiginous character to be followed subsequently by “secondary eruption.” But there is another very important point to notice: vaccination may be followed by syphilitic ulceration itself, due not to the introduction of syphilitic matter through the medium of the lymph, but due to the operation of the syphilitic taint already possessed by the child. Of this I am confident. The treatment of these cases is that for syphilitic affections of course.

TYPHUS RASH.

This consists of two component parts:—

1. A subcutaneous mottling, of a more or less livid hue, and diffused generally over the body.

2. Petechiæ, small, about the size of pins' heads, scattered all over the body, and showing out from the mottling; at first these are slightly raised, and their colour increases gradually in intensity; they do not fade by pressure, except slightly in the very early stages. The eruption of typhus is not prolonged by successive crops. It makes its appearance between the fifth and eighth day of disease, and disappears a few days before convalescence. I have known it to be mistaken for syphilitic rash.

TYPHOID RASH

Is characterized by the appearance between the eighth and twelfth day of disease of rose-coloured, elevated, circular, softish spots, about a line or so in diameter, on the abdomen, back of hand, arms, chest, and back (if kept warm). These rose-coloured spots disappear by pressure, and they appear in successive crops, each spot lasting three or four days, and then gradually fading. There may be from half a dozen to a score of these spots present at one and the same time. Sudamina often co-exist with them.

RUBEOLA (MEASLES), OR MORBILLI.

About the fourth day after the patient is taken ill with catarrhal symptoms the eruption appears, first on the face, especially the forehead, then on the chest and limbs; it reaches its height in the former situation in about two days, when it begins to fade. The changes are a little later on the other parts of the body. The eruption lasts altogether about four or five days, and leaves behind sometimes a little, at other times a marked amount of desquamation, perhaps a good deal of mottling or red staining, especially if the circulation has been inactive. The rash has peculiar features; it is of a dullish red colour, and forms *little crescentic* or *semilunar* patches of variable size, affected by the pressure of the finger, and separated by natural skin. The colour also may be livid if the blood state is bad. The crescentic form is supposed to be due to the peculiarity in the distribution of the cutaneous filaments of the nerves. The whole mucous surfaces are also affected, as may be seen in the palate, &c. After death no trace of the rash is to be detected about the body.

Diagnosis.—The characteristic points are the crescentic form, with intervals of normal skin; the dull colour of eruption, which appears on the third or fourth day; the presence of catarrh of the mucous surfaces, especially in the form of *coryza.*

In *Scarlatina* the colour is bright red, and the rash is uniform, not crescentic; it appears also on the second day; the skin is very pungent and dry; there is sore throat, the tongue is raw at the tip, or slightly furred, with red points peeping through to the surface: there is no coryza.

In *Roseola* the patches are scattered, circular in form, not made up of crescentic portions, with intermediate healthy skin; the colour is bright, and there is an entire absence of general symptoms, and coryza, &c.

SCARLATINA.

On the second day of illness the rash appears on the neck and face, and is made up of small red dots, which crowd together, forming patches of various sizes and extent; after a while the whole surface becomes of an uniform hue; on the third day, the eruption is seen on the body generally, the upper extremities, and the mucous surfaces visible to the eye; on the fourth day, the lower limbs are scarlet, whilst the surface is hot, dry, and harsh. The eruption, which may be called a general efflorescence of boiled-lobster colour, is most marked about the third or the fourth day, and it is generally more intense in colour towards evening, especially in the loins and flexures of joints. On the trunk it is often "patchy." The eruption fades on the fifth day—first on the face; desquamation follows about the eighth or ninth day.

The diagnosis between scarlatina and rubeola is the only one that requires notice.

In scarlatina the rash appears on the second, in measles on the fourth day after the first onset of symptoms. In scarlatina the rash is bright red (boiled-lobster colour); it is not crescentie, and it is uniform or not patchy, or associated with intervals of normal integument. In rubeola the rash is of dull red colour, and it takes the form of little crescentic patches, with intermediate lines of healthy skin. The skin in scarlatina is very dry, harsh, and pungent. In measles this is not so marked, nor is the subsequent desquamation so distinct or characteristic.

In measles the changes in the mucous membranes are accompanied by secretion; there are coryza, suffusion of conjunctivæ—in scarlatina, the mucous surfaces are red, dry, ulcerated; there is also sore throat of marked kind, but this is absent in rubeola. The aspect of the tongue is characteristic in scarlatina, and the pulse is very rapid and irritable.

ERYSIPELAS.

Erysipelas belongs to the domain of the general physician, and to skin pathology only to a slight extent, in so far as the evidences of the blood and tissue alteration produced by its special poison are shown to the naked eye. It is an acute diffused inflammation, ushered in by constitutional symptoms, and exhibiting itself locally by the presence of heat, tension, smarting or burning, over a surface disposed to vesicate. The local inflammation has a tendency to spread rapidly in extent, with more or less implication of the subcutaneous cellular tissue and the formation of abscess in or the occurrence of gangrene in the latter. The constitutional symptoms are: a general feeling of illness, depression, severe rigors, with alternate heats, thirst, quick pulse, loss of appetite, sometimes wandering or delirium, nausea, with pain at the pit of the stomach, a white furred tongue, and febrile urine, &c. It is usual to make two types of erysipelas. One in which the inflammatory action is sthenic, in which the general symptoms are not grave, and in which the structures, though perhaps extensively, are not very deeply implicated; this is E. simplex. The other, in which the general state is grave, the structures are deeply (and extensively) affected; abscess, sloughing, and gangrene are frequent; the virus is of active quality, and the blood state bad. This is E. phlegmonodes. The two divisional forms are merely degrees of one and the same state, chiefly influenced by two things—the quality of the virus and the state of the patient's health.

(A.)—E. Simplex.—In this form of disease, the inflammatory action has its seat in the derma, and perhaps more or less of the cellular tissue beneath. The general symptoms are those before described. The local symptoms follow quickly or in two or three days, and commence as a burning or smarting sensation, followed by a feeling of tension; the surface then looks puffy, dry, and slightly glazed, shining; the edges of the patch look raised, the part is tender and hot. In two or three days, during which time the redness and swelling have increased, blebs may form, of various sizes and shapes; these burst and dry into scabs; in five, six, or seven days convalescence sets in, the local changes abate in severity, and a yellow stain is left behind, with more or less peeling off of the cuticle. Several sub-varieties have been described, according to seat, aspect, and character of course. Thus there are —(*a*) E. erraticum, E. metastaticum; (*b*) E. miliare, E. phlyctenodes, œdematodes; (*c*) E. faciei, E. capitis, &c. &c.

Local Varieties.—The most usual situation is the *face* (of course I am speaking of idiopathic erysipelas); it generally shows itself at the side of the nose, often at its root, and quickly spreads, with great swelling of the parts, which occurrence is favoured by the presence of lax cellular tissue—*e.g.*, about the eyes, lips, cheeks, and ears. The disease may extend to the mucous surfaces. The constitutional symptoms are often marked by depression, delirium, restlessness, headache, &c. Erysipelas of the *scalp* is usually traumatic; it may be slight or very extensive, the whole scalp may be undermined, puffy, and generally infiltrated by pus, or the pus may be collected in the form of local abscess; the cellular tissue of the scalp sometimes sloughs, and the bone gets denuded and exposed, whilst serious brain symptoms are often developed.

Erysipelas of the *breast* is common in lying-in hospitals, especially in women who are out of health, from, it is said, overdistension of the milk-ducts; but this is probably only a predisponent. The breast looks red; it is tender, hot, and swollen; it then feels brawny, pits on pressure, gives a good deal of pain, is accompanied by depression of the vital powers, and terminates mostly in abscess and sloughing of the cellular tissue; the glands in the axillæ often participate in the disease. Erysipelas of the vulva often attacks the vulvæ of lying-in women, especially primiparæ. In children, erysipelas, commencing at the *umbilicus*, is often seen; particularly in hospitals. It leads to abscess and sloughing, and often death. When the *scrotum* is attacked, the swelling is sometimes enormous; this is produced by the rapid pouring out of serum into the interstices of the cellular tissue. Some call it "acute inflammatory œdema," or, when it runs on quickly to the formation of pus, "acute purulent œdema." Erysipelas of the lower limbs is a form which betokens a bad state of general health, and demands active stimulant and tonic treatment.

Erysipelas has been observed to disappear from one, and make its appearance suddenly in two or more places in succession, or to "wander" over a large extent of surface; in such instances it has been styled *erraticum*. The disease is not very deep, but very obstinate of cure, and often periodic.

In some cases implication of the skin is but slightly marked, but the cellular tissue is noticed to be much more affected than in ordinary cases. The skin at the seat of disease pits easily on pressure (is œdematous), and preserves the impress made for a considerable time. This is the *E. œdematodes* of authors, and is met with especially on the lower limbs of debilitated persons; it is also seen on the penis and scrotum.

(B.)—E. Phlegmonodes is, so to speak, the inflammatory form. The general symptoms of invasion are severe, fever runs high, rigors are severe, delirium is commonly present, typhoid symptoms often set in at an early date, and the patient is in considerable danger, or death may ensue. The characteristic of the local disease is the great rarity of the occurrence of resolution. The part attacked is painful, hot, tender, swollen, and very red; in a day or two it becomes softish, rigors and throbbing pain announce the occurrence of suppuration, which may be very extensive; the cellular tissue, the fasciæ, the intermuscular septa all partake in the diseased action; the blush goes, or nearly so, but the swelling increases. The pus in the tissues is mostly mixed with blood and portions of cellular tissue. In this variety of erysipelas a change takes place for better or for worse about the fifth or sixth day. In some cases, where the virus is very active, or the patient's health is markedly bad, the sloughing and destruction of the cellular tissue may be extensive and marked: this is the *E. gangrænosum*. The constitutional symptoms are here very severe, the inflamed part becomes dark-coloured, blebs appear, filled with bloody fluid, the general aspect of the limb is ecchymotic, and it feels tense at first, then boggy, puffy, and at length gives way; dirty matter exudes, the structures slough, the fasciæ and cellular tissue mortify, and the patient sinks, or recovers with great difficulty, the local mischief taxing all the powers to their utmost for the process of repair.

Morbid Anatomy.—Erysipelas consists essentially in an infiltration of the corium, and subcutaneous tissues in severe cases, with "inflammation corpuscles" (see fig. 9), which separate the constituent elements. The blood-vessels are also much enlarged; in addition bullæ (fig. 7, chap. iii.) are formed by the separation of the layers of the rete and the horny layers of the epidermis, the cells of the rete being elongated so as to form fibres, which themselves are so arranged as to form meshes. In addition to the formation of bullæ in the epithelial layer, and the infiltration of the corium and deeper parts by corpuscles (escaped white blood cells) there is something else. The outer and inner root sheaths of the hair follicle are separated by fluid effusion, which may also detach the hair from the papilla. The following representation (fig. 9) of Neumann gives a good idea of the changes above described. It does not show the bullæ.*

Causes.—Various causes have been assigned to erysipelas. It is believed to be due to a special poison, which attacks those whose resistant power is weakened either by mental or bodily ailment. It attacks women more than men in the proportion of about 7 to 4, though it is less fatal in the former; in women, too, the disease is mostly idiopathic. The death-rate of 260 cases, given by Mr. Bird, was 7·5 per cent. The average duration of cases is from ten to twelve days. The disease occurs mostly in spring and autumn; it is liable to occur in spirit-drinkers; those resident in hospitals; and attacks wounds. There does not appear to be any connexion between the occurrence of erysipelas and derangement of menstruation. It has its maximum degree of frequency about the age of twenty, gradually decreasing till that of thirty-five (Aubree). Cold and moisture together are regarded as favouring its occurrence; and, on the whole, traumatic is more fatal than idiopathic erysipelas. It appears that Bright's disease especially favours the occurrence of erysipelas if any traumatic injury be received.

Diagnosis.—Erysipelas can scarcely be confounded with any disease, with the exception of erythema; but the general symptoms, the tense, shining, smarting blush, and the implication of the cellular tissue, are not observed in erythema.

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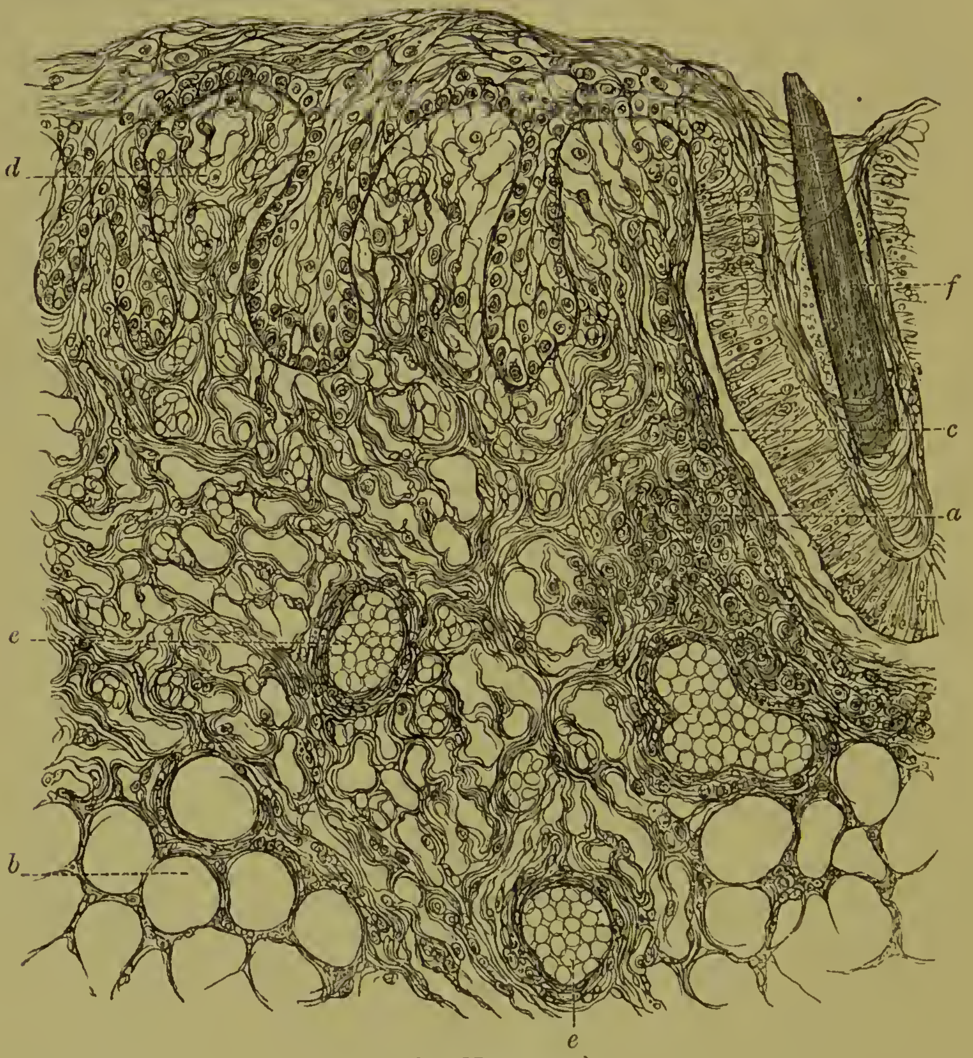
* The pathological anatomy of erysipelas has been carefully studied by MM. Volkmann and F. Steudener (Centralblatt für die Med. Wissenschaften, 36, 1868), who agree generally in the above description, believing the pus cells to come from the escaped white blood cells. They state that the exudation remains less abundant in the superior layers of the dermis. In the deep-seated parts it becomes excessive, and the vessels are enclosed by thick layers of leucocytes; finally, large patches are found, which are entirely formed by the accumulation of these bodies. These masses sometimes present a fusiform appearance, which might lead one to conjecture a proliferation of the corpuscles of the connective tissue, but in their centre one meets with the section of a vessel. The corpuscles of the connective tissue do not present any essential changes. These alterations are not localized in the dermis, and attain their greatest intensity in subcutaneous and adipose cellular tissue.

As soon as the skin becomes pale, towards the second or third day, the disappearance of the extravasated elements commences, especially in the subcutaneous cellular tissue; one observes there nothing more than considerable quantities of cells undergoing rapid transformation into very fine granular bodies; some hours later nothing more can be found than finely granular filaments.

In the more superficial layers of the skin one observes also that the lymphatics are filled with granular cells of a similar nature, either pressed together or commencing to accumulate near these vessels. But a small portion of the elements which form the infiltration may be taken up afresh by the lymphatic vessels, the majority die, and the most striking point is the rapidity of this process. Towards the third or fourth day no trace of the morbid processes is any longer to be distinguished in the parts previously affected.

The Prognosis.—The case is grave if the general symptoms indicate high fever, with subsequent prostration; if the patient be old; if the disease attacks the lower limbs; if it occur in the scalp and there be diffuse abscess with depression; if the surface assume a livid aspect, and present phlyctenæ; if there be much vomiting and delirium; if it be the phlegmonous variety, and phlebitis ensue, and if it be metastatic or erratic.

Fig. 9.



(After Neumann.)

a. Cell infiltration of corium. *b.* Empty fat cells with cell growth around limiting membrane. *c.* Separated connective-tissue fibres. *d.* Enlarged papilla with cell-growth. *e.* Distended blood-vessels. *f.* A hair loosened from outer root sheath.

The Treatment.—In treating erysipelas it is important to anticipate, as far as possible, the probable amount of depression that will be produced by the virus action and the formation of abscess, and the demand that will be made by the reparative process upon the powers of the patient. And this can often be done. If rigors are severe, if there be high fever, and if the local symptoms are equally marked, then not only will the present excitation produce a marked subsequent diminution of vital power, but abscess and destruction of tissue will probably be more or less extensive. Then if the patient be out of health, if he be surrounded by bad hygiene, and especially if he be of good or advanced age, we must husband all the power he possesses. The pyrexia is treated upon ordinary principles; only ammonia should enter into the composition of our saline mixtures. A brisk purge is required at the outset.

Should the disease be very severe, the practitioner should be on the *qui vive* for the first symptom of failing power, and treat the disease as tending to produce acutely a typhoid condition. Common sense is the guide in regard to diet, wine, and medicine. Where the disease is less severe, sulphate of magnesia and quinine, or, what is better, tincture of steel, in large and frequently repeated doses, is the remedy I employ: ♏xx—♏xxx—ʒj, every hour. Locally it is desirable to exclude cold, apply heat, and keep the part covered up. In the early stage, inunction of lard subsequently to painting the part with a solution of nitrate of silver in spirit of nitric ether is of use; or if there be much pain, warm lead, belladonna, or poppy fomentations should be applied. In all cases early excision in suppuration, and for the relief of tension, is essential.

RUBELLA, RUBEOLA NOTHA, BASTARD MEASLES, ANOMALOUS EXANTHEM OR ROSELLA.

There is a form of eruption which resembles measles, but differs in several particulars, and about which much dispute exists. It was described by Dr. Babington under the term rubeola notha; it is thought by others to be a roseola. The Germans call it rotheln. Dr. Richardson has called it rosalia. In some instances it seems to have a bright red punctated aspect, and is not unlike scarlatina. This is probably Hardy's erythema scarlatiniforme. It is common in Egypt, I know; it is reported as having occurred at Malta, India, &c. After more or less pyrexia, the temperature being always highest the first day of attack, and not exceeding 102 degrees, and falling next day to 100, and getting normal the fifth day, a dusky red papular rash appears. It is never crescentic, but is uniformly distributed. The redness, the hue of which may vary, is most intense during the first day, when the rash is seen on the face, arms, legs, body, in succession; there may be slight desquamation. There are no catarrhal symptoms, though the fauces are reddened. The patient very quickly recovers; there is no dropsy or renal disease following in its wake. The disease is held to be not contagious, or if it be so it is but slightly so, and it often occurs in those who have already had measles. The treatment is that suited to a simple pyrexia. It is difficult sometimes to say to which the eruption is most allied in aspect, rubeola or scarlatina, but in either and all cases there is an entire absence of the general features of these diseases. It is scarcely bright enough in colour for a roseola, though it might very well be regarded as a roseola of dark colour. On the whole, then, I conclude that it is a distinct and specific exanthematic fever.

GLANDERS AND FARCY.

Equinia, or, as it is usually called, glanders, is a disease which originates in the horse, the mule, and the ass, and when it occurs in man it is communicated to him from one or other of these animals, either by the contact of the "discharge" of the disease with wounds, or by pure absorption. In the former case glanders commences as an erysipelatous inflammation of the lymphatics and glands, following quickly upon the poisoning of the wound. In other cases there is a period of incubation of from three to fifteen days. However, the introduction of this poison into the human subject is followed by the development of acute febrile symptoms, rigors, articular pains, delirium, marked prostration, with a tendency to gangrenous inflammation of the lymphatic vessels, the occurrence of a pustular and phlyctenular eruption, inflammation of the skin, ulceration and discharge from the nostrils, with subcutaneous abscesses. The above is a rough outline of the disease. Veterinarians describe two varieties of equinia, *Glanders* and *Farcy*. In the former the disease falls upon the nasal mucous membrane and the skin; in the latter the nose is unaffected, and the skin often escapes, the lymphatics and glands being specially the seat of disease. *Glanders* may be acute or chronic. In the *acute* form there is inflammation of the lymphatics, with abscesses specially about the face and over the joints. Pustules appear over the cheek, the arms, and the thighs, and commence as red papules, with a distinct areola, isolated or semi-confluent; these are accompanied by bullæ with dark areolæ. At the same time there comes on what appears to be erysipelatous inflammation of the nose, eyes, and the contiguous parts; and soon from the nose a thick, viscid, often fœtid humour is discharged, and if the nasal mucous membrane be examined, pustules and ulceration will be observed over its area. In the chronic disease the skin may be free from eruption, but the nasal symptoms are present. The general symptoms are the same as in the acute variety, only less marked.

Farcy is either acute or chronic. In *acute* farcy all the general pyrexial symptoms of acute glanders are present, and occasionally some eruption occurs, but the nose escapes. The disease may therefore be regarded the same as acute glanders without the nasal affection. Inflammation of the lymphatics and subcutaneous abscess are prominently marked. In *chronic* farcy the health deteriorates, and chronic indolent abscesses form about the forehead, the calves, &c., giving rise to open ulcers. The disease lasts from a few months to three years. Acute glanders may be developed out of chronic farcy.

Diagnosis.—The disease commences like rheumatism, but the occupation of the attacked, the commencement of the disease like erysipelas, the prostration, the absence of joint inflammation itself, the pustular eruption, and the ulceration and discharge from the nose are significant. In chronic glanders there may be no eruption; the disease then resembles ozæna, but if farcy be present the diagnosis is certain. With regard to farcy, if eruption be present, no mistake can occur, but difficulties do arise in chronic farcy without eruption. We determine the nature of the case by exclusion. It may resemble syphilis.

Prognosis.—Equinia is a dangerous disease, and in acute cases almost always fatal.

Treatment.—I have no experience upon this point. It has never fallen to my lot to treat a case of glanders. It is said upon good authority that the combination of arsenic and strychnine acts apparently better than anything else. Hyposulphites and perchloride of iron have been recommended. The use of nitrate of silver to the eruption, and chloride of zinc solution, two grains to an ounce night and morning, to the nasal mucous membrane, or a weak carbolic acid lotion, is commended.

FRAMBŒSIA, OR YAWS.

By general consent this disease—occurring in Guinea, America, Africa, and the West Indies, particularly Jamaica and Dominica—has been assigned a place under the head of acute specific diseases. It is very questionable whether the disease has the least right to be so placed. But pending the possession of more exact information as to its nature, I speak of the disease in this place.

I am glad to be able to give the reader a good deal of information about frambœsia, for Dr. Gavin Milroy has very courteously allowed me, with the concurrence of Dr. Imray of Dominica, to make use of an article on "frambœsia, as the disease has existed in the Island of Dominica," which has been written by Dr. Imray, in reply to the series of interrogatives issued by Dr. Milroy, with a view to elicit reliable information on the subject of frambœsia, or yaws, during his recent visit to the West Indies.

My friend Dr. Bowerbank, of Jamaica, who has been in active practice in that island for upwards of thirty-five years, has also at great trouble to himself sent me a most elaborate account of the history, the nature, and the treatment of yaws as it exists in Jamaica, which I regret I cannot use in detail here, but from whence I shall quote a number of interesting facts.

The disease, called also *mycosis* (fungus) and *pian*, according to all accounts is almost entirely confined to the African races, and was brought to the West Indies by the blacks who were imported thither as slaves some years ago. The white population appear to be exempt from the disease. Dr. Imray is disposed to think that this immunity may be due perhaps to absence of exposure of the whites to the efficient cause of the disease. Every writer indeed on the disease allows whites may be attacked, and Dr. Bowerbank tells me he has himself witnessed the fact many times.

Characters of the Disease.—Dr. Bowerbank describes the appearance of the eruption as consisting at first of "small flat spots, patches, or blotches of a brownish or red-coloured efflorescence, ... giving the appearance of a congeries of the minutest blood-vessels, and sometimes they are disposed in the shape of a halo. These spots vary in size from a pin's head to a pea or more. They are often well marked on the sides and soles of the feet and the palms of the hands." Tubercles follow. Dr. Imray says: "If yaws are observed as they first make their appearance on the surface, one or more minute whitish or yellowish points or spots will be perceived, not larger than a pin's head. These yellow spots are seen very distinctly on the dark skin of the negro. Gradually the spots enlarge, and begin to project from the surface, retaining for most part their circular form, and have much the appearance of small globules of yellow pus, and unless carefully examined might readily be so mistaken. The skin remains unbroken until the yaws attains perhaps the size of a small pea, but the cuticle may give way at any time. Then a yellowish, spongy surface presents itself, from which a thin fœtid fluid oozes, and this spongy body continues to enlarge and projects considerably from the surface. Yaws are usually circular in form, and may be seen in the same patient of all sizes from scarcely more than a pin's head to a patch one or two inches in diameter, and in every stage of their progress. Generally they are separate, but sometimes in groups close together, small and great. Again, they are met with of an oval form, but more rarely. In other cases they are irregular in shape, and so close together as to make one mass."

"It frequently happens that one of these tubercles assumes very large proportions—one or two inches in diameter, or even more, projecting from the skin like the other yaws, and covered with yellow scabs, or having a moist yellow surface streaked with red. This amongst the English receives the name of 'mother yaw,' and in the French *patois*, 'maman pian.' All the other yaws may entirely disappear, and this mother yaw only remain; and if neglected, it will degenerate into an intractable ulcer, eating its way into the tissues, and causing extreme and irreparable destruction of the parts around, and be often accompanied by great constitutional irritation and extensive emaciation."

The ordinary tubercle of yaws which forms the spongy yellow growth does not itself actually ulcerate. It attains a certain size, giving out an ichor, then "begins to shrink, the discharge ceases, a yellow scab forms, and darkens as it becomes dry. From day to day the mass lessens, and finally the scab drops off, leaving what appears to be an indelible dark spot on the dark skin."

Dr. Bowerbank also says that only a portion of the early eruption maturates and becomes truly tubercular, and only from some of the spots do fungus excrescences spring; the typical yaw being the size of a raspberry, round or oval, reddish or pinkish, and firm in consistence. The largest excrescences grow on the lips, pudendum, perineum, anus, and toes.

In Jamaica there are a number of names given to variations in ordinary yaws—viz., "watery yaws," "ringworm yaws," "the Guinea-corn yaws." The first is that condition in which the yaws are œdematous (watery), a state of things seen in cachectic subjects. In ringworm yaws the tubercles are disposed in circles. If yaws are small and round the disease is termed "Guinea-corn yaws," from the supposed resemblance to a grain of maize. Other terms are "master or daddy, or fadee;" likewise "mammy, or mother or moder;" and also "grandy" yaws. The first of these are applied to the fungus which appears during the course of the eruption. The two latter to the fungus which forms in the seat of inoculation and precedes the general eruption. There is some confusion here, because European dermatologists give the term "mother" or "mama" yaw to very large fungus growths that outstrip others in the course of the disease.

Dr. Imray takes exception to the generally received description of yaws as not sufficiently portraying the characteristic features of the disease. He says: "The ordinary yaw excrescence is not unlike a piece of coarse cotton wick, a quarter of an inch, more or less, in diameter, dipped in a dirty yellow fluid, and stuck on the skin in a dirty, scabby, brownish setting, and projecting to a greater or less extent. This comparison is not so elegant as that of the strawberry, but I believe it to be more appropriate to the loathsome eruption, and more exact. It is true there are sometimes red spots or streaks on the yellowish surface of the yaws fungus, but this appearance instead of being general I have only found exceptional."

The yaws are somewhat insensible, according to Dr. Imray, in their early stage.

Seat of the Eruption, and Distribution.—The eruption, Dr. Imray reports, "generally breaks out in the face, the neck, the upper and lower extremities, the parts of generation, the perineum, the hips, and about the anus. They are much less frequently observed about the trunk, and are not so often seen on the hairy scalp. They may form on the nostrils where the mucous membrane joins the skin, and here the yaws may assume an elongated form, nearly closing the nostril, and hanging down on the lip." The same form may be observed about the eyelid. "Near to the mouth they may appear in such numbers and so closely set together as to form almost a ring round the mouth. This is especially the case in children. Around the anus also they sometimes coalesce and form one projecting circular band an inch and more in breadth."

An attack of frambœsia varies much in severity as regards the size and number of actual yaws.

Termination of the Eruption.—Dr. Imray states that in all cases after the disappearance of the yaws without ulceration, "a dark spot is left where each yaw has been and of corresponding size. These spots are of deeper shade than the natural black of the skin, and they remain for many years, but may possibly wear out in time. The skin is quite smooth, and the texture uninjured." In white skins the spots are of lighter hue than natural. When, however, the disease ulcerates scars are left. Dr. Bowerbank agrees, I find, in his experience with Dr. Imray.

Should yaws not properly develop its several early stages the general health suffers, the patient becomes cachectic, unhealthy ulcerations appear over the body, especially about the joints, which swell and become painful, and offensive effluvia are given off from the body, and the attacked dies a lingering death, or becomes crippled, more or less, by the deep ulcerations.

Yaws do not seem to interfere with the occurrence of or to modify other diseases, such as the acute febrile diseases, syphilis, vaccinia, according to Dr. Bowerbank.

Unusual Forms of Eruption.—Dr. Imray notices two. In one the tubercles are replaced by circular scurfy spots of different sizes. The natives call this "*dartres.*" The other form appears "as small watery-looking bodies raised above the skin, and thickly set together, and it is called *pian gratelle.* It may occur together with the "pian dartres." Both are difficult to cure. May they not be complications only? The "dartre" of Dominica is called "yaws cacca" in Jamaica.

When the disease attacks the feet it is called *tubboe.* The skin is very thick over the yaws, and prevents their coming to the surface, and thus gives rise to much pain. The growth which sprouts through the cuticle is called in Jamaica "crab yaw." In Jamaica the term membra yaws (from membra, the negro abbreviation for remember), is applied to the few fungoid excrescences that sometimes show themselves in those who have had yaws before.

The Inoculated Disease.—Dr. Bowerbank tells me that if a poisoned wound be slight then little or no irritation may result, and the part heals. But in other instances of inoculation the wound inflames, and is covered with a brownish scab, beneath which is a small sore depressed in its centre and with raised everted edges, and giving out ichor. This ulcer may heal up before the general eruption appears; but if large this does not happen. In any case the primary ulcer becomes unhealthy when the general eruption appears, and then fungated. The growths then turn dark ("get ripe") and shrink, to be succeeded by others. Healing may take place without scarring. After a while constitutional irritation occurs to a slight degree, the skin gets dry, particoloured, and scurfy (yaws cacea), as if dusted over with flour—cacea meaning fæces; this state lasts seven to fifteen days, and is succeeded by the first crop of yaws. The further progress is that of the disease as before described.

Duration of the Disease.—The disease may last for years, with periods of comparative quiescence, instead of weeks or months. The usual duration is a few months—"from two to four under appropriate treatment." Dr. Bowerbank tells me the average duration is about thirteen months in severe cases.

Constitutional Symptoms.—Dr. Imray states that there is very little if any constitutional disturbance at the outset of the disease. The attacked work, and if children play as usual. It is not until the disease has existed some time that the general health suffers from the pain and ulceration attending the disease, the sufferer getting debilitated and emaciated.

Contagiousness. — Dr. Imray speaks positively of the disease being conveyed from person to person by contact, or the absorption of the poison through some abraded surface, though it is not infectious. It attacks only those living in contact with the already diseased, and the poison may be carried from individuals by flies. Dr. Bowerbank remarks that the excoriations and wounds connected with scabies, Chinese itch, tick bites, leprosy, syphilis, small-pox, bucnemia, all render the individual more liable to the contagion of the disease, but he does not believe that the disease can be taken except through downright positive contact of the healthy with the diseased. The uncleanly are more liable to take the disease than the cleanly, but the healthy and cleanly take the disease if they are brought into direct contact with the infected. If one member of a family become affected, all the members susceptible to the disease are attacked in turn.

The period of incubation is thought to be from three to ten weeks.

Sex and age make no difference as regards the liability to the disease. It is doubtful if it be hereditary.

Immunity from Second Attacks.—A person who has passed regularly through yaws is secure from a second attack, according to Dr. Imray. Dr. Bowerbank speaks of persons having two and even more attacks, so that the idea that one attack guards the attacked from others is not apparently true. But there is a long interval between the attacks seemingly.

Relation to Syphilis.—Dr. Imray, referring to the regular and definite origin and course of yaws, the immunity which one attack gives from a second, &c., denies its connexion with syphilis. Clinically speaking it could only be a tertiary form of syphilis, but the yaws is essentially a *primary* form of disease, and has no such antecedents as syphilis.

Nature of the Disease.—All recent observers agree that the disease is one *sui generis*. Dr. Bowerbank has long held this view I know, and Dr. Milroy tells me that he has no hesitation in affirming from what he has seen of the disease that frambœsia, or yaws, is not syphilis, but a distinct and independent malady.

The course of the disease is much influenced for the worse, says Dr. Bowerbank, by bad diet and by uncleanliness.

The Spread of the Disease.—In accounting for the recent increase of the disease in Dominica, Dr. Imray supposes that before the emancipation of the slaves every case of yaws was isolated in yaws-houses, and thereby the disease was kept in check, and indeed extinguished in some places, such as Antigua. In Dominica, which is very mountainous and has a scattered population, the scattered groups of the population have been left much to themselves, without responsible medical care or supervision, and yaws has recently been undetected in the outlying parts of the country, and has gradually extended, whereas in other level islands the case has been different.

Dr. Bowerbank has alluded in the papers sent me to the almost total disappearance of yaws from Jamaica for a series of years, just after the declaration of the freedom of slaves; at least so far as the medical practitioners of the island seeing the disease. The explanation is to be found in the fact that at one time inoculation was systematically practised on the negroes on the estates, and that when the slaves were emancipated the practice ceased. He states that in Africa the practice is common; parents go a long way to get yaws for their children from a particular tribe or place, and they call it "buying the yaws." The practice was put into operation in Jamaica, probably, by mothers to escape working on the estates, and in order to give them the chance of remaining at home to take care of their children. The lazy adult also practised it to escape work.

The more recent increase of yaws in Jamaica Dr. Bowerbank believes to be in part due to the importation of the disease by Coolie emigrants, to the acclimatization of a species of red tick (bête rouge of Honduras), which is now found in the greater part of the island—not Spanishtown or Kingston, as yet, however—and which produces small sores over the body, often obstinate in healing, and through these sores yaw poison may find its way to the system. Another cause is asserted to be an increase of overcrowding amongst the poor, favoured particularly by the house-tax imposed of late years; and lastly, the entire neglect medically of yaws cases amongst the community generally.

Treatment.—Dr. Imray says the treatment of yaws is as simple as it is usually effective in every instance if commenced at an early period of the disease, and if only persisted in with strict regard to cleanliness and attention to diet.

In the early stage it is customary first to wash the patient, then to encourage the full development of the eruption by the exhibition of sulphur and supertartate of potash for six or eight days. In the next place, mercury is to be administered, in conjunction with decoction of sarsa, or sassafras, or mezereum, in the form of *tisanes*, to which great virtues are attributed. The mercury is dropped directly signs of its action on the gums show themselves. Tonics should be conjoined with mercurials in the case of weak persons. Occasional aperients are also needed. The diet should be good and unstimulating. As regards local applications, Dr. Imray advises a carbolic-acid solution, or weak nitrate of mercury ointment. The natives apply the boiled and beaten-up leaves of the physic nut, *Jatropha curcas;* the juice of the sour orange, the *Janipha manihot;* or the flowers of sulphur dusted over the part.

Tubboes may be treated by paring off the cuticle down to the yaw or yaws, and then applying some such astringent as powdered alum.

Dr. Bowerbank tells me that mercury is the active ingredient in all the yaws specifics—and their name is legion—used in Jamaica, that iodide of potassium is also efficacious, and especially if the disease attack the mucous membranes.

DENGUE, OR DANDY FEVER.

In the East Indies, Calcutta, and West Indies, a disease called dengue exists. About the third day the skin gets turgid, and an efflorescence, beginning at the palms of the hands, gradually spreads over the entire body; it is not unlike in some cases measles or scarlatina, of a blotchy aspect.

The following interesting account of the rash of dengue is given by Dr. Charles in a clinical lecture published in the *Indian Medical Gazette*, April 1, 1872:—

> "THE TERMINAL RASH.—It is usual for the terminal rash to appear during the course of the fourth day, and not at the end of the third. . . . . The fugacious character of the eruption is one of its special characteristics. It is quite the rule for it to be fugitive, and in this way it often evades detection. . . . . In many cases it appears thus suddenly between the visits of a medical man, and disappearing leaves no trace behind. Very frequently an attentive nurse or observant mother will tell you that your patient was covered for a few hours with an abundant rash, without your being able to confirm her assertion. In no other eruptive fever is this the case. . . . . The rash appears while the temperature of the body is natural. . . . . In a few instances the thermometer will mark 100° F. at the time the terminal rash appears, but this is so exceptional an occurrence that I am by no means prepared to say whether in such case even this slight rise of temperature is caused by the disease, or whether some trivial accidental circumstance may not have led to the slight elevation of temperature. Dengue is the only fever that I am acquainted with which possesses the peculiarity of the eruptive period being habitually without fever. . . . . The rash which you saw can be very easily described. It was a measly rash. So very exact, indeed, is the resemblance, that mothers learned in the various eruptive fevers of infancy will argue the question with you, and insist that the child with such a rash must have measles. More than this, medical men who think they have special experience in measles, treat a succession of such cases, under the impression that they have to do with measles. Other medical men have told me that they had never seen measles with the same

attendant symptoms as those of the cases they were now treating, and yet they regarded the eruption as so peculiarly distinctive, that they lulled to rest their doubts on the subject, and tried to persuade themselves that the disease must be measles. Any dermatologist, if he were shown a case in which the eruption was at all general, if he attempted to found a diagnosis on the characters of the eruption alone, would infallibly find himself in error, and pronounce, without hesitation, that the case before him was measles. I cannot tell you any means of distinguishing between the measly rash of dengue and that of measles. Not only are the elements of which the rash consists similar, but in many cases they arranged themselves on the skin in the same crescentic manner. In dengue, however, I have noticed that the arrangement of the irregularly-rounded patches and crescentic margins of the eruption is seldom so marked as in measles. It seldom begins on the face as in measles, and often first appears at the root of the neck or on the knees, or elbows, or palms of the hands. It is sometimes quite as general an eruption as that of the best marked case of measles, but, as a rule, it is not so, and much larger spaces are generally met with in which there is no eruption than are usually left uncovered by the eruption of measles.

"So far from constituting a general eruption it is very often extremely limited in its appearance. In this case, when the eruption first came out, four inches at the upper part of the chest was all that was occupied by it. This is often the case, but more usually, even when it is limited in extent, some other part of the body, as one or both knees, for example, may constitute the whole surface affected by it.

"In most of the cases which I have seen, the eruption having once disappeared, does not return again. . . . . It is by no means uncommon for the terminal rash to appear as urticaria. . . . . Nurses and mothers recognise this as nettle rash, and it possesses the usual characters of this eruption, as it occurs under other circumstances.

"Its fugitive nature is often well marked, as it may remain visible for only half an hour. The distressing itching it occasions is at times very troublesome. . . . . It often proves the source of great annoyance and calls for treatment. . . . . The itching of the surface is sometimes a very prominent symptom even in those cases in which no eruption has been seen. . . . .

"Competent observers have assured me that they have seen the eruption begin in the minute red points observed in measles.

"About the termination of the rash I can speak with more confidence. In almost all the cases that I have seen, it disappeared entirely after remaining out for a few hours. In other cases I have seen it remain out for two or three days and vanish suddenly. I think I observed it to remain for five days in an exceptional case.

"In several cases it did not end in this way. It gradually declined like most other rashes, or even when gone left a mottling of the surface behind, not unlike the appearance seen after measles. This was not common in my experience, but other observers have told me they have met with it so frequently as to cause them to regard it as the rule.

"In rare cases the hyperæmia attendant on the rash is so great as to lead to distinct ecchymoses. I have seen the tiny elements of the eruption thus *hæmatographed* on the skin with vivid minuteness, and remaining distinct for many days after the eruption proper had gone. . . . . The terminal rash you have seen to be one that usually very closely resembles measles, while at times the form it assumes is that of urticaria. . . . . A third form is that of scarlatina. In my experience this has very seldom occurred. During this epidemic one of my medical brethren assures me he has seen more of this form of rash than of any other. This quite coincides with what was seen in others of the recorded epidemics, and in 1853 the rash seems much more often to have resembled scarlatina than measles. A fourth form of rash is lichen, a fifth roseola, while sixthly, vesicles and bullæ have been met with in this as in previous epidemics.

"I have already incidentally mentioned that at times no terminal rash is observed. I use this expression advisedly, because the rash is often overlooked. . . . . I am confident that I have seen many cases without a trace of rash, and that the absence of the exanthem which we regard as a rare occurrence in other eruptive fevers, is very common in dengue. I cannot give you any exact idea of how often the eruption is absent, but I should not be a bit surprised if subsequent observations proved it to be absent in about a third of all the cases."

KIDINGA PEPO.

Dr. Christie describes an exanthematous disease resembling "dengue." Its name signifies cramp-like pains induced by evil spirits. Rheumatic pains and fever are succeeded by a scarlatinal-like rash, with swelling and puffiness of the face, with constipation. In forty-eight hours a remission takes place for two or three days. The fever generally returns on the fourth day, and on the fifth the rash appears, and spreads over the body in twenty-four hours. This is followed by swelling of the lymphatic glands, redness and rawness of the mucous membrane of the throat, lasting a greater or less length of time. The skin desquamates. The treatment consists in the use of quinine followed by iodide of potassium for the pains. Dr. Christie is the physician to the Sultan of Zanzibar, where he saw the disease above referred to.

CHAPTER VIII.

LOCAL DERMAL INFLAMMATIONS.

GENERAL REMARKS.

UNDER the head of local dermal inflammations I include those diseases which partake essentially of the nature of local diseases, and are characterized by "inflammation," as the primary and the essential phenomenon. Now by inflammation I understand not merely hyperæmia, with engorgements of the affected parts by blood, so that the parts are swollen and red and hot, not only hyperæmia, with stasis in the vessels and serous effusion in addition; but also an increased activity in the tissues themselves outside the vessels, and the formation of new products, or "inflammatory exudation," to use a commonly employed term. The character and source of these new products are important items in this matter of inflammation.. As regards the character of the new product, its typical features, and ultimate destination in marked cases are those of pus. Pus in fact is the highest grade of inflammation products, but pus is not necessarily formed, and it is held that the new products may give rise to the production of a tissue like connective tissue; probably, as will be seen in a moment, the pus and the new connective tissue have different origins, and this leads me to refer to the source of the "infiltration." It is now generally taught and believed that the new cell growth is made up mainly of white blood-cells, which have escaped through the blood-vessels; but not only this, for it is also affirmed that the new cell products are in part developed by subdivision of the cells of the normal tissues outside the vessels, and particularly the connective tissue. Stricker's observations on inflammation of the cornea seem to prove this, for they go to show that at a time prior to that at which the corpuscles of the blood get out of the vessels into the tissues, the actual corpuscles of the cornea exhibit endogenous nuclear growths, giving rise to large, many-nucleated cell masses.

Very recently M. Duval* has repeated Cohnheim's experiments, and declares against Cohnheim's views. In the case of the mesentery, which Duval has examined with very high powers (1600 linear), he contends that in the very act of opening the abdomen of the frog to withdraw the membrane, lymphatic sacs are opened, and that from these a constant flow of lymph corpuscles takes place, which group themselves and form rows along the sides of the vessels, simulating the appearances that would be presented if they had escaped from these vessels or white blood cells. Further, M. Duval refers to the observations on winter frogs of Heumann, who has pointed out that scarcely a white corpuscle remains in the blood, and yet that, if inflammation be excited, corpuscles in abundance become visible outside the vessels, which must apparently be derived from the corpuscles of the tissue themselves. The elongation of the white blood cells towards the walls of the capillaries at certain points, M. Duval explains differently from Cohnheim. The corpuscles outside the vessels, he thinks, hypertrophy, a current of fluid from the blood setting in towards them from and through the vessel wall, which becomes irregular and viscous opposite them; and it is at these points that the viscous white corpuscles within the vessels are arrested, and then elongated into processes. There are few, however, who will doubt that white blood cells do escape into the tissues.

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* Séquard's Archives de Physiologie, 1872.

The next question to be determined is the disposal of, or changes that result in, the escaped white blood, and the proliferated connective-tissue corpuscles. In what is termed resolution the new growth made up of these elements in varying proportion does not give rise to the production of pus, but the white blood cells become disorganized or degenerate and are removed, whilst the connective-tissue cells are organized into connective tissue of a more or less immature kind. The degenerate cells disappear viâ the lymphatics, which take up certain cells bodily perhaps, or more likely after they have undergone fatty metamorphosis. But if pus form the connective-tissue corpuscles give origin, it is thought, to pus cells no less than do the white blood cells. Therefore pus is derived, it is held, from two sources—namely, from white blood cells, but also from connective-tissue corpuscles; whilst the only source of newly organized tissue is the latter. There are three leading changes therefore observed in inflammatory exudation—*resolution*, *organization*, and *suppuration*.

The local inflammations I am about to consider are generally characterized by hyperæmia and the presence of inflammatory infiltration. They are the erythemata; eczema, or catarrhal inflammation; that form which commences as a serous catarrh of the papillary layer, and is followed by the outpouring of sero-purulent discharge, as in catarrh of the mucous membrane; plastic or papular inflammation, in which the inflammation is characterized as much by the absence of serous as by the deposit of fibrinous exudation; suppurative inflammation; and lastly, hyperæmia, accompanied by excessive formation of epithelial and certain cell growths in the papillary layer, conveniently termed squamous inflammation, as in psoriasis.

Two of these groups or classes might be separated from inflammation perhaps, and dealt with as hyperæmias solely, and these are the first and the last of the above named. In the former there is hyperæmia and serous exudation, as in erythema; but what is the important thing to notice in relation to the point under discussion, there is no cell proliferation or cell infiltration in the tissues. If the hyperæmia is persistent then there follows in due course hypertrophy. To avoid, however, making another group in classification, and pending the settlement amongst pathologists as to what really constitutes inflammation, I have grouped the erythematous diseases under the head of local inflammations; the more so as these erythemata do in some cases run on to naturally well-marked inflammation. With regard to "squamous inflammation," I may say that there is here only hyperæmia and hyperplasia or hypertrophy, and no actual inflammatory infiltration. Psoriasis, the type of the class, is on the border-land only of inflammation; but I group it under inflammations for the present at all events.

The reader will very naturally want to be told wherein lies the difference between hypertrophy and hyperplasia following hyperæmia, on the one hand; and the changes that occur in the skin in zymotic diseases, and those that are observed in lupus, syphilis, and leprosy on the other hand; and what are the differences that lead dermatologists to make the special class of diseases to be dealt with in detail in this chapter. In the first place, with regard to the local changes in the zymotic diseases—as small-pox and typhoid—these are only parts of a general malady, and could not be regarded in a group characterized essentially by peculiarities of local change. From an etiological point of view it would be impossible to do so. Then, in regard to lupus, syphilis, &c., there are certain anatomical characters and behaviours about the growths, which, no less than peculiar concomitants of associated constitutional states and the like, that mark them as belonging to a special class of neoplasmata or heterologous new formations. In regard to the distinction to be drawn between hyperplasia consequent on inflammation, and hypertrophy, as Rindfleisch hints, the latter is much slower, even if the etiology be left out of view; and I should add, there is in the one the escaped blood cells developing into the new tissue, and in the other the increased supply of blood and transuded serosity. But the two have certain analogies, and it is difficult if not impossible to draw a line between hypertrophy and inflammation. But further, it may be said—and this applies to tumours and special neoplasms, as lupus and syphilis—whilst the inflammatory infiltration is caused by some irritant, the tumour or heteroplastic neoplasm arises spontaneously, or from a specific cause acting generally and modifying nutrition. There is with inflammation the accompanying heat, redness, pain, and swelling, and these "signs" acutely developed; there is less tendency to spontaneous cure with tumours; and lastly, the inflammatory exudations directly tend to the formation of pus.

ERYTHEMATOUS DISEASES.

The diseases which rank under this head as having simply erythema as their primary and only feature are exceedingly simple and well defined. They are three: erythema, roseola, and urticaria. Willan placed these with the acute specific diseases, under the term exanthemata. But though they are pyrexial, and the result, as regards the eruption, of a disturbance of the normal state of blood, yet they do not run so definite a course; they do not depend upon so specific a cause in each case as the exanthemata, and they are not like them contagious; hence they form a separate group. These erythemata are characterized mainly by the occurrence of active hyperæmia of the longitudinal plexus of the skin (erythema), and its immediate consequences—ex., serous effusion—nothing more. In other diseases hyperæmia is present, but then it is the insignificant element in the morbid processes; the squamation, the exudation of serosity, together with the formation of crusts, the hypertrophy of the papillæ, the morbid cell-growth present from the beginning of disease and not as a mere secondary occurrence, all indicate peculiar alterations in the behaviour of the tissues, which cannot be explained by the mere presence of hyperæmia. In erythematous diseases the redness may be rosy (roseola), or bright red (erythema and urticaria); in urticaria "wheals" (see Elementary Lesions, p. 29) are present. The erythema in these diseases is removable by pressure. Unlike the more common eruptive diseases of the skin, the erythemata exhibit the closest connexion between local and constitutional phenomena. Febrile symptoms antecede and are relieved by the development of the erythema in the exanthemata, showing that the local skin-changes are secondary, and only parts of a general disturbance which is primary. I have referred to those forms in speaking of erythema as a lesion (see p. 28). I also have included under this head sections on follicular hyperæmia, pellagra, and certain medicinal rashes.

I. ERYTHEMA.

Erythema is a superficial inflammation of the skin, occurring in slightly raised patches, diffused or circumscribed, of varying size, rarely exceeding, however, three or four inches, and generally much less. The redness disappears at once by the pressure of the finger, but returns instantly on its removal; it is accompanied by slight swelling, simulating papulation or slight tuberculation from exudation of serosity—the escape of which is explained by the obstructed capillary circulation—heat, and itching. The disease ends in furfuraceous desquamation with slight staining. The general symptoms are slight—*i.e.*, mild fever, headache, quick pulse; but they may be practically nil.

The varieties of this erythema eruption may be divided into two groups—(A), local or idiopathic, induced mainly by local irritants;

and (B), symptomatic, including the erythemata which occurs in parts of other and general diseases. In the former the disease is merely hyperæmia, without much if any appreciable effusion into the cutis and cellular tissue; in the other there is more escape of serosity from the vessels, and hence greater prominence of eruption. Hence the two groups have been designated respectively after Hebra, *erythema hyperæmicum* and *erythema exsudativum.*

GROUP I.—Idiopathic or local: includes *erythema simplex, E. intertrigo, E. læve.* Erythema simplex is produced by the irritation of external agencies, such as friction, stings, heat, the contact of acrid fluids, plasters, medicinal inunctions, and stimulating applications of all kinds. There is redness, diminished or dissipated by pressure, returning on the removal of the finger, without sensible swelling, except in E. læve, when it is due to the dropsy always present, but a sense of heat, and variation in colour according to the activity of the general circulation. The slightest forms of burns would rank under this designation of E. simplex. Chilblains, or pernio, is another form of erythema caused by cold.

Erythema *intertrigo,* or simply intertrigo, is the name given to the redness which is produced by the friction of two folds of delicate skin, especially in fat persons and children: this is seen in the groin, axilla, neck; sometimes the irritation causes the exudation of a fluid, partly perspiration, whose acridity increases the local mischief, and presently an offensive raw surface is produced, giving out a muciform or puriform fluid (the erythema purifluens of Devergie). The same disease is seen about the prepuce and the vulva. Intertrigo is particularly seen in lymphatic subjects. It simulates eczema; but the origin is evidently from the friction of two surfaces; the secretion is not that of eczema, it is thin, muciform, stains but does not stiffen linen, and results from a mucoid degeneration of the tissues. Hardy correctly describes the disease produced by the inunction of mercurial ointment as a vesiculo-pustular erythema; in which upon red patches, little vesicles (or puriform vesicles) appear, quickly rupture, desiccate, leaving behind an erythema, whose surface desquamates: the disease subsides in a week or ten days. It differs from eczema, in its acute course, and the character of its secretion, which is clear, not viscid, and does not stiffen linen, as in eczema.

E. læve, is the name given to a blush of erythema, of greater or less extent, which is seen over œdematous parts, especially on the front of the legs in dropsy. The skin may slough and become gangrenous at the seat of the blush. The redness which precedes the formation of bed-sores receives the name of *erythema paratrimma.* It is caused by the pressure of constant lying when the system has lost much of its tone, as in fevers and other lowering diseases.

I have met with several examples of erythema of the hands produced by contact with dyes. In the early part of 1870,* a man, aged twenty-eight, foreman in a cheap kid-boot shop, presented himself to me with hands red and swollen in different places from the action of the dye of the kid boots, made of sheep-skin, which the man was in the habit of trying on "all the day." The disease first commenced in the fourth finger of the left hand, which "swelled up and felt hot, stiff, and tender." The redness then extended to the knuckles and the front of the hand. When I first saw the case the hands were much swollen, so that they could not be closed; the fingers looked large; the redness was patchy. In the left hand it was well marked along the outer and palmar side of the little finger and the outer edge of the palm; also about the third finger. In the right hand the redness and swelling were most distinct about the thumb at the part which opposes the fingers, and the skin here looked just as though it were going to blister; it felt hot, and throbbed a good deal: in fact, the parts of the hand principally affected were exactly those against which the boots rubbed in the act of their being tried on to the customers' feet. There was no doubt from inquiry that the dye of the boots caused the disease. Rest for a few days, an oxide of zinc lotion constantly applied, and saline aperients internally, soon restored the parts to their healthy condition. The man returned to his occupation soon afterwards and had a recurrence of the erythema, which he has since prevented by shielding his hands in his occupation with gloves.

I also had under my care about the same time a similar case in an inspector of clothing, whose duty it was to examine the cheap black and blue cloths used in a certain establishment connected with the public service, he doing so in a manner that necessarily caused considerable friction of the cloth against those parts of the hand that were inflamed.

Passive erythema results from mechanical obstruction to the passage of blood through the veins by tumours, ligatures, gravitation, inaction of the heart, varicose veins, and the like. In these cases the colour of the redness is bluish or dark; the erythema is removable by pressure, but tardily returns, and the part affected is often sensibly cold and swollen.

GROUP II., or Symptomatic Erythema.—Under this head rank those hyperæmias which are the consequence of a more or less general pyrexial state. In all of them there is malaise, headache, and quick pulse, pains about the joints, and disordered bowels, a day or two before the eruption appears. This assumes different forms, and Hebra has included all these under the one term erythema multiforme. In England we specify *E. papulatum*, *tuberculatum*, *nodosum*, *fugax*, *marginatum*, and *circinatum*. The first three of these are stages the one of the other, and during their course the redness assumes a bluish tint, and fades away insensibly into the surrounding skin. In *E. papulatum*, small red spots, varying in size from a pin's head to a split pea, appear; at first they are not raised, but presently become papular, of more vivid colour, pale on pressure, and *die away in a few days* with slight desquamation. These spots may be aggregated or separated, and are seen especially on the back of the hand, the arm, neck, and breast. The disease lasts about three weeks, and seems to be associated with rheumatic symptoms. It occurs mainly in young people. *E. tuberculatum* is the same disease in which the erythematous blotches become somewhat tuberculated. It is seen in servants who make a change of residence from country to town. *E. nodosum* is a more marked stage of the last noticed; the spots are larger—as large as a nut or walnut, even attaining a diameter of two or three inches, the long diameter being in a majority of cases parallel to that of the limb, oval. They are generally seated on the anterior aspect of the leg, very rarely indeed on the arm, and rarely above the knee. The swelling is raised, slightly hard, painful, and evidently accompanied by tumefaction of the cellular tissue; the redness, at first vivid, but not so defined or limited as in E. papulatum, presently becomes purplish at the circumference and paler in the central part, dying away like an ecchymosis. The patch also softens and often simulates fluctuation, but it is said *never suppurates.* Chorea and rheumatism are associated sometimes with this form of erythema. It is uncommon after the age of twenty, and appears to be connected in some way with adolescence. It is believed that a thrombus is the starting-point of this, and perhaps the other varieties of erythema. It is generally accompanied by pyrexia and rheumatic pains. I have seen erythema nodosum occur in conjunction with the other varieties above named. *E. fugax* is simply patchy-redness, which quickly disappears, and is capricious in its character. This variety of erythema is noticed in persons of irritable habit, in those who are suffering from any digestive or assimilative derangement (especially in females)—*e.g.*, from dyspepsia, muco-enteritis, uterine, hepatic, or renal disease of subacute character. The erythematous patch is red, but tender, fading and desquamating, and accompanied by more or less pyrexia,

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* *British Medical Journal*, Feb. 5, 1870.

Should erythema occur as a circular blush, with an unaffected centre, it is called E. circinatum; and if it have a well-defined circumference, E. marginatum. I should imagine that these two latter are unworthy of separate names, and are often the erythematous stages of parasitic disease, tinea circinata, and especially in hot seasons, of chloasma. Hardy describes an erythema scarlatiniforme that has been referred to under the head of rubella or anomalous exanthem.

Acute diseases, especially at the time of convalescence, often exhibit a slight access of febrile disturbance, and after a little itching and local heat, red patches appear about the limbs, thighs, buttocks, neck and face. These patches vary in size from that of a pea, to that of the palm of the hand. They are vivid red, last a few days, and then fade with desquamation. They are frequently an accompaniment of thrush. Hyoscyamus, belladonna, and copaiba give rise to erythemata, which will be noticed under the head of medicinal rashes, and lastly, after surgical operations red rashes occur: these are generally roseolous; they may be erysipelatous, or indicative of pyæmia.

Erythema Gangrænosum.—In persons who are reduced by debilitating disease, patches of dull erythema may occur here and there, and instead of the reparative process being properly carried on, the part may slough and become gangrenous. This one readily understands. In many cases patches of purpura are the starting-points of the gangrene. Mr. Wilson records a case in which calcareous solidification of the arteries was found after death in explanation of the case. The affection has been named erythema gangrænosum. A good case has been recorded by Dr. Hilton Fagge.* The patient, a man æt. fifty, was admitted into Guy's Hospital, on April 23rd, suffering from difficulty in holding his water, double phthisis, and great emaciation. He complained of a feeling of tightness in the calves of the legs, and pretty soon purpuric spots appeared about the knee, which felt stiff. On the 29th the patch on the left knee, about 1½ inch long, appeared to be formed of dead skin, surrounded by a deep purple line. A patch on the right knee presented the same appearance. During the next few days the centres of the gangrenous spots, which were quite insensible to pricking, &c., assumed a yellow aspect, whilst fresh gangrenous places developed in the site of other apparently purpuric spots. There were purpuric places on the arms, but surrounded by a slight red halo. The patient died on the 21st of May. The post-mortem disclosed the usual signs of tubercular disease of the lungs, but also ulceration of the intestine and disease of the mesenteric gland. It will be observed that the disease was symmetrical, and that the skin changes consisted in dry gangrene. Dr. Morley Rooke, in 1864, described a case in which he believed spontaneous gangrene occurred. But I think the disease in his case is different in aspect from true gangrenous erythema, yet the case is worth mentioning. The patient was a lady, unmarried, good-looking, hysterical, of general good health, with vivacious manners, and aged thirty-nine. After an attack of feverishness and hysteria, she began to betray very capricious tastes and tempers towards everybody with whom she had to associate, On the fourth day a small red patch appeared below the left mamma, in the sulcus between it and the ribs, 1½ inch by 1 inch in size. The patch was not elevated, but there was some pricking sensation in it. For two or three days things remained in *statu quo*, then suddenly a good deal of redness overspread a large portion of the mamma, and in the course of the following day, a white patch, the size of a shilling, flat, smooth, painless, was observed in the centre of the blush, and in the next twenty-six hours this had enlarged to the size of half an orange, the cuticle having become loosened at one part, and the skin beneath as white as, and about the colour and appearance of, a smooth layer of firm wax or tallow (being insensible and dead). No bullæ nor vesication occurred. Patches next appeared in symmetrical order over different parts of the body for four months; after a time irritation of the kidneys and bladder set in, &c. Now this form of disease was wholly different from true gangrene of the skin. There was, in the first place, an entire absence of any general enfeebling condition sufficient to account in any degree for the occurrence locally of gangrene—nay, the patient was in good health. The erythema, at its first occurrence, was attended by active hyperæmia, it was of good colour, and the reparative process was active. The co-existence of gangrene due to a general lowering of vitality and of activity in the local circulation with rapid repair, involves a manifest contradiction the one of the other. On this ground alone I deny that the affection was produced naturally. Then, on the other hand, suppression, not merely retention of urine, appeared in three weeks, together with cystitis, severe vomiting, &c.—symptoms at once referrible to the absorption of cantharides, and its action upon the urinary organs; hence the bloody urine. In addition, the patches of disease sometimes only reddened, and did not slough. Then the rapid destruction of tissue, the general symptoms bearing no sort of relation to (wholly unaccounting for) such kind of destruction; the evident attempt to conceal the early erythematous stage of disease; the healthy healing of the sore; the non-assumption by the bed-sore of the characters of ulcers elsewhere (supposing the blood to be under the influence of a special poison); the period of repose assumed by the disease, its long course, the moist aspect of the slough (being quite different from that produced by blood poisoning, and exactly that produced by local applications), and the marked hysteria of the patient; all point to an artificially-produced disease, and so I feel sure it was. When erythema is followed by gangrene, there must be a sufficient lowering of vitality to account for local death, unless immediately induced by purpura, by embolism, or by obstructed arteries.

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* *Guy's Hospital Reports*, Jan. 1868. Another case will be found recorded by Brodie, in his works, vol. iii. 392.

Prognosis of Erythema.—Erythema when it becomes chronic is a source of great discomfort; in the more marked forms the disease lasts two or three weeks. In E. læve and E. paratrimma, the prognosis is that of the general malady present.

Diagnosis.—Erythema is known by its *superficial character;* the redness disappearing by pressure; by the peculiar change in the colour of the circumference of the patch from bright red to purple during resolution, the absence of marked itching, heat or tension, or burning, by the general circumscription of the patches, their little tendency to spread, and their but slight elevation. *Erysipelas* differs in the shiny, hot, burning, tense, blushy swelling, the rigors at the onset, their tendency to spread, and the implication of the cellular tissue, together with the deep (non-rosy) red hue. *Urticaria* is known from erythema by the peculiar stinging sensation, by the presence of wheals, which form and disappear in a wondrously capricious and sudden manner; by the irritability of the skin, easily detected by the red line which the nail or slight friction at once brings out, or the rapid springing up of a wheal in the spot irritated. *Roseola* is something like E. papulatum, but the general symptoms are especially pyrexial in the former, rheumatic rather in the latter; the eruption of roseola is rosy or pink and of a defined character, often punctate; erythema is generally a partial, not a general affection like roseola. Erythema papulatum may resemble *lichen urticatus*, but in the former the papules are primary, and the disease runs an acute course and is not seated about the trunk; in the latter wheals are present and papules arise out of wheals; the disease is chronic, and the skin generally is irritable and is the seat of stinging and itching, especially at night, and the trunk is specially affected.

Treatment.—In the case of the local or idiopathic erythemata I first of all remove all irritants, pay especial attention to cleanliness, and merely apply soothing agencies, prevent friction, and use zinc ointment, or glycerine and rose-water, or the linimentum aquæ calcis, or fine starch, or lycopodium powders. It is better to avoid poultices. All that is further needed is to give aperients internally. In intertrigo I adopt the same plan of treatment in mild cases. Sometimes intertrigo becomes a troublesome disease, with sour, acrid discharge, which irritates the parts around and induces even excoriation; the disease then is generally aggravated by some internal derangement, whose type is muco-enteritis. In these cases, alteratives, with chlorate of potash in the first instance internally, are of service, particular attention being paid to diet; such food as corn-flour, maizena, and the like must be forbidden, and proper nutritive substitutes (Hard's food or Robb's biscuits) be given to children in conjunction with a suitable quantity of milk. Then locally, zinc ointment, starch powder, bismuth lotion, zinc lotions, or a calamine lotion may be used (see Formulæ Nos. 39, 40, 45, 76, 77, 117); and lastly, if chronic, weak solution of nitrate of silver may be used; syrup of iodide of iron and cod-liver oil are also indicated in strumous subjects.

In the erythemata dependent upon general causes I always remember the effect of ingesta; that a gouty or rheumatic habit, disordered menstrual function, dentition, delicacy of skin, or lymphatic temperament, are present in greater or less degree. It is important to allow the patient the use of an unstimulating diet only, to forbid him or her spirits, wine, and beer, to clear out the bowels, and in the early stage to adopt a soothing régime, with tepid sponging, and emollient baths. Tonics are generally demanded later on in the case. If there be any distinct rheumatic symptoms, I always increase the renal secretions, get the liver to act by aperients, and then give colchicum (in acute cases) and iodide of potassium with bark and ammonia. In E. nodosum, aloes and iron in combination are very useful in the fat, bloated, full-coloured, but flabby and stunted lymphatic subjects that are often affected. Locally, the use of an alkaline lotion is all that is needed. Anæmic people of course need iron.

In all cases, if there appear to be an overloaded yet anæmiated state of system, I mostly combine (saline) aperients with preparations of iron; and any neuralgic tendency should be met with quinine.

Bed-sores are best treated by attempting to "harden" the skin in the early state by spirit applications, removing pressure as much as possible at later stages by pads, cushions, and water-beds, and by using charcoal poultices or soap plaster spread on soft leather to the sores. For chilblains, equal parts of turpentine and tincture of aconite or belladonna, and soap liniment, together with tonic treatment, iron, quinine, and cod-liver oil, constitute the best treatment.

II. ROSEOLA.

It is important to know this disease—not so much because it gives rise to any anxiety or trouble, as that it is likely to be confounded with measles and scarlet fever. The disease—roseola—is non-contagious, is accompanied by some fever and by a rash, not much raised above the level of the surrounding part, but of *rose* colour. It is in fact an erythema of a *rosy* hue. The eruption is patchy, and its colour deepens somewhat as the disease advances. It is accompanied by slight itching and sensation of heat. It is not preceded by any marked signs or symptoms of catarrh, but only slight redness of the mucous surfaces of the palate and fauces.

Roseola is divisible into two groups, *Idiopathic* and *Symptomatic*. In the latter group the roseola occurs as an accidental phenomenon in the course of acute diseases, and hence is called symptomatic; in the other group it exists as the sole and primary disease.

Idiopathic Group.—Roseola infantilis is the name given to roseola when it is seen in infants. It roughly resembles measles without the catarrh; it runs an irregular course as regards precursory symptoms, which vary in degree, and in the extent, degree, and seat of eruption. Now, it is pretty general but patchy, now, limited to the arm, or the neck, or trunk; the rose-blushes often come and go for several days capriciously, and are accompanied by local heat and itching, which are often marked at night. The catarrhal symptoms of measles are, as before indicated, absent.

The patches are about half an inch or so in diameter. The redness generally lasts a dozen or more hours. *R. æstiva* is simply ordinary roseola occurring in the summer time. The very same eruption occurs in the autumn, and is generally seen in children on the arms and legs, in the form of circular blushes, about half an inch in diameter, and of a dark hue; but it is named the *R. autumnalis*. When the disease assumes the form of rings (and this is generally observed about the buttocks, thighs, and abdomen), developed from little rose spots, and enclosing presently a healthy circle of skin, an inch or so in diameter, the variety *R. annulata* is present. The concomitant symptoms are the same as those of the R. æstiva. It is absurd to make these varieties.

The Symptomatic Group contains roseolas which are merely rosy erythemata developed in the course of acute diseases, generally appearing about the arms, breast, and face, thence spreading over the body. *R. vaccinia* co-exists with the formation of the vaccine vesicle, and is accompanied by slight fever. It commences around and about the seat of the vaccination. In cases of fevers, about the tenth day or so, and indeed whenever the weather is very warm, the perspiration is apt to distend the sweat glands, which become more or less hyperæmic, so that little vesicles form, *i.e.*, miliaria and sudamina. Sometimes red blushes accompany this particular kind of vesicular eruption, and to these rosy blushes the name *R. miliaris** has been given. It is the *R. febrilis* of authors. So in regard to acute rheumatism and cholera, the rose rash has been termed *R. rheumatica* and *cholerica*, but it will be evident that these varieties of roseola are simply items of particular diseases divorced from their true place and connexion as parts of the descriptions of those several diseases.

After surgical operations a rash like scarlet fever very frequently occurs; its colour varies somewhat; it is not contagious, and is without the general symptoms, the throat complication, hot skin, quick pulse, and tongue of scarlet fever. It is due, no doubt, to some volatile poison free in the blood. It has no gravity.

Little is known as to the cause of roseola. The causes, according to some, are legion—heat, cold, ingesta, irritation of delicate skin, gout, change of season, acidity, &c.

The Prognosis offers no point of gravity or interest.

The Diagnosis.—Roseola is likely to be confounded with rubeola, scarlatina, urticaria, erythema. It is known from measles in that it possesses no catarrhal symptoms; in that there is no relation between the febrile symptoms and the amount of eruption; in that there is no epidemic influence at work in its production; in that it is irregular in its distribution, non-crescentic, not uniform, not dark-coloured; but irregular, rosy, and often commencing in other parts than the face. Rubeola has a regular course, and is not partial in regard to the distribution of its accompanying eruption.

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* Some further remarks in reference to miliaria will be found under the head of diseases of the perspiratory glands.

It makes very little difference if roseola be confounded with erythema, for the one is a *red,* the other is a *rosy* erythema.

In *Scarlatina,* the general aspect of the disease is grave; the fever is marked, the throat is bad, the tongue is peculiar; the skin harsh, dry; the rash general, punctiform, boiled-lobster like. The progress is more uniform, and the disease can be traced to contagious or epidemic influence.

In *Urticaria,* the diagnosis is at once settled by the discovery or production of a wheal, and the peculiar stinging character of the local irritation, with the capricious character of the eruption.

The *Treatment* consists in that which is merely tentative: so far as general measures are concerned, in giving salines, aperients, laxatives, &c., and treating any special symptoms. Locally, in removing all causes of irritation—*e.g.,* irritated and tender gums, by lancing; acidity of stomach, by magnesia, soda, or lime-water; intestinal irritation, by "alteratives," such as grey powder, rhubarb, and subsequently tonics, keeping up the warmth of the surface, and if possible, bringing on perspiration. The surface should not be chilled. My general plan is to give salines with ammonia, followed up by a mild aperient, and then quinine.

III. URTICARIA, OR NETTLE-RASH.

This disease—urticaria, or nettle-rash—presents certain peculiarities according as it occurs in the adult and the child, owing, in the latter, to the greater sensitiveness of the skin, and the tendency to the deposition of lymph in the site of the wheals. Hence I shall, on clinical grounds, treat of urticaria in the adult and urticaria in the child. The reader will understand that this division is adopted for convenience only. I wish also to say that I hold urticaria to be essentially neurotic in origin, and should have classed the disease under the head of neurotic diseases if we possessed a little more certain knowledge as to the exact part which the nerves play in its genesis; for the present I retain it amongst cutaneous hyperæmias. Urticaria, moreover, has its affinities to the hydroa of Bazin, to be referred to under herpes. I will now describe

A. URTICARIA IN THE ADULT.

This is a febrile and non-contagious disease, in which hyperæmic elevations, similar to those that follow the sting of a nettle (urtica), are produced upon the skin. The symptoms are general and local. When the disease is well marked there is more or less fever, quick pulse, dry skin, headache, malaise, mostly pain at the pit of the stomach, and often irritation of the mucous membrane of the intestinal tract, whilst on the skin appear what are termed wheals or pomphi; the development of these wheals is accompanied by tingling and burning; the wheals suddenly come, and almost as suddenly go, without leaving any stain behind, or being followed by desquamation. The eruption may attack a small part of the body, or the wheals may spring up quickly in succession over a much larger area. Wheals have been described in part at p. 29: their tint may be rosy, but more generally it is whitish. These wheals vary in size and shape; they may be linear, band-like, irregular in outline, or oval; the white centre, which feels hard and raised, may be small, and the red halo large, or a large red patch may whiten at two or three points in its area. In all cases the accompanying sensation is a hot, tingling, burning one. Wheals are evoked readily by scratching. The skin generally is remarkably sensitive, and the application of any irritant is followed by the production of redness or even wheals; so that it is possible by using the nail of the finger to write one's name or to draw figures on the skin, and these are marked out by red lines or wheals produced at the seat of the scratchings. Sometimes the formation of wheals is attended by abundant effusion of serosity, but this happens where the texture contains much lax cellular tissue. The disease attacks persons of every age, and most frequently in spring and early summer perhaps, whilst it may also be intermittent or periodic.

A number of varieties of urticaria are made by writers. I think only two need be made—viz., *acute* and *chronic.*

Acute Urticaria.—In this variety there is more or less fever, together with marked symptoms of stomach derangement, such as nausea, white and dry tongue, thirst, quick pulse, headache, and general malaise. I have noticed in most cases a rosy blush about the face. The itching and stinging sensations accompanying the eruption of wheals, which are scattered, are well marked and intensified at night. The skin generally is irritable, and wheals readily spring up when it is irritated. This, the typical form of the disease, has been called *urticaria febrilis;* when it has been caused by some error of diet, it has been styled *U. ab ingestis;* and when the wheals are more closely than usually packed together, *U. conferta.* But urticaria febrilis includes these two subvarieties. In those cases in which errors of diet excite the disease, the latter may occur in a very severe form, and the patient seems as if poisoned. There is high fever, vomiting, headache, quick pulse, and delirium, whilst the mucous surfaces are hot, irritable, and tingling, and the conjunctivæ implicated. Presently the face rapidly swells, so that the countenance is completely masked; the ears, nose, eyes, and lips are swollen, and feel hot and tingling. The mucous membrane of the larynx is evidently affected. The swelling speedily subsides and travels to the body and trunk, and this very rapidly. The eruption is accompanied by intolerable itching, and the formation of wheals is attended with alleviation of the general symptoms. Desquamation to a slight extent succeeds to the phenomena described. The substances that generally act as excitants of this acute eruption are shell-fish (especially mussels), pork, prawns, lobsters, oysters; but eggs, fruit, rice, raspberries, strawberries, mushrooms, cucumbers, coffee, &c., and the generally harmless articles of diet, in certain subjects, induce it; and so may valerian, copaiba, &c.

In some cases the formation of wheals is accompanied by such a free outpouring of serosity that the cuticle is uplifted into blebs or bullæ, and this has been termed *urticaria bullosa*, but the reader should refer to this disease under the head of herpetic diseases (Hydroa).

Chronic Urticaria.—The chronic forms may result from the acute, or develop out of a state of tolerable health, and without apparent cause. There is little pyrexia present in chronic urticaria. When the crops of wheals are of pretty long continuance, the disease is called *U. perstans.* In other cases the wheals are small and very fugitive; but the skin is irritable and the itching intense. This is *U. evanida.* The name *factitious urticaria* has been given to that form of the disease which is easily produced by mechanical irritation, and is not idiopathic.

In persons broken in health, especially by intemperance, the urticated patches are raised, in consequence of the implication of the subcutaneous cellular tissues into patches about the size of a nut or walnut; these swellings show themselves on the limbs, and possess the especial feature of urticaria—viz., quick appearance and disappearance, or intermittence. This is called *U. tuberosa.* Some cases of the kind are recorded by Fouquet[*] and by Perroud,[†] the latter styling the five cases he gives "ephemeral congestive tumours of the skin." The former treated the disease in women, and declares that it is connected with disorder of the sexual functions, pregnancy, or lactation; the latter says that those attacked first feel, in that portion of the skin in which the swelling is to appear, a sudden abnormal sensation—either a sense of coolness, of tension, of tickling, or of slight pain. In a few hours a hard, hot, indolent, pale-reddish or colourless swelling appears, and may attain the size of a turkey's egg. There may be more than one tumour. In a few minutes, or a few hours, the swelling or swellings entirely disappear, leaving the skin in a normal condition. Perroud associates the disease with uterine disturbance. In some cases there is swelling and apparent œdema of the cellular tissue—now here, now there; but the wheals are more or less scarce and occasional, The redness, the heat, the tingling, and swelling exist, but it is only the accidental appearance of the wheal that discloses the true nature of this variety, called *U. subcutanea* (Willan), or *œdematosa* (Hardy). Even here capriciousness is marked, for the accompanying œdema rapidly appears and rapidly disappears.

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[*] Berl. Klin. Woch., Aug. 7, 1863.

[†] Annales de Dermatol. et de Syphilis, 1, 3.

In some cases, in elderly people, who are apparently in good health, urticaria may assume the characters of evanida, perstans, and tuberosa together. I have seen several of these cases; the only likely cause appeared to be disordered digestion, with flatulence, pain after food, &c. In these cases the tongue was suddenly swollen so as to almost fill the mouth, the eye was closed, the face puffed-out on one side, the scrotum and penis became enormously œdematous, and tuberose patches of urticaria showed themselves about the arms or the legs. Such a case was lately under my care. It seemed to me that bottled beer was the exciting cause. But finally, apoplexy supervened, and carried off the patient.

It occasionally happens that in the formation of wheals, instead of serum being poured out, a certain amount of hæmorrhage takes place. This effusion of blood in connexion with the escape of serosity from the vessels is not confined to urticaria, but may take place under certain circumstances in connexion with almost every skin affection which is hyperæmic and inflammatory—ex., pemphigus, herpes, &c. When the effusion is conjoined with the development of wheals, the blood generally raises the cuticle somewhat, and produces what is called *purpura urticans*. The cuticle sometimes bursts, and exposes a reddened surface that does not heal, and whence a certain amount of bloody fluid may ooze for a while. The name of *urticaria hæmorrhagica* has been given to this latter disease,* and it includes the so-called *purpura urticans*. The hæmorrhage, however, is a mere epiphenomenon, though it indicates a purpuric tendency. These little hæmorrhagic wheals are sometimes seen about the neck and face of nervous women and elderly men out of health. I have noticed in one case a large blotch about the knee of the same character. At first the spot itched, then a wheal appeared, and slight escape of blood into the epidermis occurred.

Pathology.—It is very difficult to explain the exact agency by which wheals are (see Elementary Lesions, chap. iii.) produced. It is clear that the nervous system plays a very important part, and particularly the vaso-motor nerves. I cannot think that mere sudden dilatation alone of the vessels will account for the production of wheals. It seems to me that at the exact seat of the wheal there is sudden dilatation, probably succeeding contraction of the arteries, but at the same time some of the capillaries in the immediate neighbourhood are in a state of spasm; and it is the obstruction to the exit of blood from the part—perhaps in part due to the contraction of the muscular fibres in the skin, conjoined with the free dilatation of vessels—that gives rise to the rapid outpouring of serosity which is sufficient to produce wheals. But then this leaves the real difficulty unexplained. Upon what does the highly sensitive state of the vessels depend? That they are hypersensitive is all that I can say. The peculiar susceptibility of the nerves of the skin in urticaria is well exemplified in the following case, related by Dr. Heusinger, of Marburg. It was that of a boy, aged sixteen, in whom, "when lines were traced on the skin, the course of the lines, in the space of half a minute, reddened; and upon this reddened base there quickly rose up white ridges or wheals, so that in two or three minutes the lines of the writing stood up in strong relief, as exact in figure as if they were cut in marble by the most able sculptor. At the end of thirty or forty minutes the writing subsided and vanished completely, without leaving behind a trace of its presence. When the red lines appeared they were accompanied with an elevation of temperature sensible to the young man himself, and amounting to 1½ to 2½ degrees of Centigrade, and when pricked with a fine needle the wheals gave forth a minute drop of serum, as do the wheals of urticaria; but however much or frequently the experiment was repeated, the boy felt no inconvenience. In explanation of the phenomenon, says Dr. Heusinger, it is obvious that the stimulus applied to the nerves of sensation was reflected upon the skin in the form of redness, heat, and swelling."*

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* Jütte, Zeitschrift für Klin. Med., 185

Now then what is the sequence and nature of the phenomena in such a case as the above? First, there is a morbidly sensitive skin; irritation is then applied, and is followed by spasm of the muscular fibres of the skin, and also of the capillaries, with subsequent dilatation of these vessels. Then follow hyperæmia or redness, escape of serosity elevating the central part more than the outside of the lines, the whole constituting what is termed a "wheal." *The tissues are passive.* The disordered condition of the nerves of the skin is the basis of urticaria, and the disordered sensation, burning, tingling, &c., preceding eruption, itself dependent upon hyperæmia acutely produced, indicate as much.

Causes.—Supposing that there is a peculiarly sensitive condition of the nerves of the skin in urticaria, it is easy to see that wheals may be evoked in many ways—(1) by local irritants; (2) by the circulation of acrid or effete products in the blood—ex., uric acid, bile, &c., which, coming to the surface, become oxidized and more active, and (3) by reflex irritation. Under the first head, or local excitants, rank the acarus, fleas, bugs, mosquitoes, lice, flannel, the contact of numerous other irritants, such as "jelly-fish." Under the second head must be placed certain changes in the blood induced by gout, rheumatism, or disordered digestion, the circulation of medicinal substances, such as valerian, copaiba; and under the third, pulmonary, gastric, uterine, renal disorders, mental anxiety, and emotions of various kinds. In all these cases there is an influence that directly acts upon the disordered susceptibility of the cutaneous nerve fibres. In very many cases the urticaria is not due so much to the circulation of any irritating substance or product, as to the reflection of impressions made on the stomach by dietetic errors. I know of no problem more difficult of solution than the determination of the immediate cause of the eruption in some cases of chronic urticaria.

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* The case is recorded in Virchow's Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin, June, 1867.

I have indicated a good many exciting causes. I think that very frequently it is a loaded gall-bladder, the contents of which do not find their way to the intestinal tract in the usual manner, but are absorbed and circulated in greater or less amount with the blood, finding their exit chiefly through the kidneys. I have frequently noticed that some subjects are greatly relieved, by a sharp attack of bilious vomiting, from urticaria that is both extensive and chronic, but the disease returns apparently with the non-excretion of bile, only to be relieved by another attack of "biliousness." Now I hope no reader will be seeking for a distended gall-bladder in every case of chronic urticaria. It needs much discrimination on the part of the practitioner to determine whether the exciting cause is a local irritation, impurified blood, the reflexion of gastric irritation, mental worry, &c. &c., and each individual case must be judged upon its own merits. I should mention that asthma has been observed to be associated with urticaria in a peculiar manner, and urticaria is sometimes periodic or intermittent, and this concomitance lends much weight to the idea of its being essentially a neurotic disease. Dumontpallier records a case of intermittent urticaria, for example, in which the attacks appeared each night for six weeks. The parents were both asthmatic, the grandfather was asthmatic, the grandmother suffered from angina pectoris and rheumatism, the brothers were rheumatic, and four of the children suffered from intermittent diarrhœa, alternating more or less with actual urticaria.

Prognosis.—There is no gravity attaching to urticaria. Acute attacks *ab ingestis* are of short duration. Chronic urticaria is abominably troublesome; the intermittent form is also very obstinate.

Diagnosis.—Urticaria ought not to be confounded with any other disease. The sudden appearance of eruption and its capricious character, the tingling sensation, the presence of wheals, gastric disturbance, and irritability of skin, are absolutely diagnostic. I have seen it mistaken for scarlatinal rash, but the error detected by irritating the skin, which causes the appearance of wheals. The evanescent character of the wheals distinguishes urticaria from the erythemata; and in the instance of erythema papulatum, there are primary papules and no wheals; the eruption is of smaller size, feels hard and is persistent; the disease has in fact nothing in common with urticaria. It is its peculiarly capricious character which distinguishes urticaria. *U. tuberosa* wants the regular and persistent course, the lividity, the soft feel, the oval shape of erythema nodosum.

Treatment.—The treatment of urticaria is most unsatisfactorily laid down in books. A no less excellent authority than Neumann disposes of it in thoroughly German fashion in sixteen lines. Generally speaking the reader is told to "correct any digestive disorder, improve the general health, and use remedies to allay itching." The practitioner may of course content himself with palliative measures, but he should seek to discover such as tend to bring about a radical cure of the disease. If the reader will refer to the section on causes, he will see that there are three sets of excitants of the actual rash of urticaria—local causes, reflected mischief, and disordered blood states. Now this implies that an important distinction is to be drawn between different cases of urticaria—between urticaria as the sole disease, and urticaria as complicating or a consequence of other diseases. Under the latter head are found cases of urticaria secondary to scabies, and phthiriasis, uterine disease, &c., and naturally treatment should here be immediately directed to the cure of the primary disease, though it will be necessary to take local measures for allaying the irritation of the skin. I always ask myself in the first place when a case of urticaria comes before me, Is it secondary to some local irritation? Have I to deal with scabies, or pediculi, or bugs, as the real cause of mischief? If not, then I proceed to determine whether there be stomach mischief (dietetic error) directly poisoning the blood, or if not, if there is mischief in any particular organ, reflected upon the skin? I of course deal now particularly with the cases falling under the two latter heads, and will indicate the general principles of treatment. The means for alleviating and removing urticaria are local and general. In no case must the practitioner a moment lose sight of the morbidly sensitive state of the skin as a thing to be dealt with by special remedies. These are to be employed for the purpose of allaying and also preventing further irritation. In all cases flannel should be removed from contact with the skin, the utmost cleanliness should be observed, no sudden change of temperature should be permitted to play upon the skin, either by way of exercise, draughts, or the like. Then the skin should be soothed by emollient and alkaline baths, anointing it if possible with oil. I always further seek to relieve the skin and to give it rest, by throwing more work on the kidneys, and by the exhibition of saline aperients. And I also prevent the circulation of effete products, urea, uric acid, and control all kinds of disorder which may be reflected on to the skin, and lastly, tone up and lull by anodynes the nerve paresis. These are the principles of treatment. I find urticaria one of the most difficult and unsatisfactory of all diseases to cure. But the acute are more satisfactory to treat than the chronic cases.

The following is a *résumé* of what appears best to be done in the several varieties :—

U. febrilis.—In simple cases one may prescribe saline aperients, and effervescents with milk diet; debar the patient the use of stimulants, and exhibit alkalies largely diluted; at the same time alkaline baths, with half a pound of carbonate of soda in an ordinary hip bath, may be prescribed twice a day, together with lotions of bichloride of mercury and rose-water, or cyanide of potassium lotions. (See Formulæ 40, 44—6, 49, 54—6, 57—62, 117.)

If the patient be gouty, colchicum should be given with salines; when fever runs high, I have usually given acetate of potash, with tincture of digitalis, and even potassio-tartrate of antimony.

In *U. ab ingestis*, or urticaria caused by dietetic errors, it is important to administer at the outset an emetic (zinc or ipecacuanha), and to follow this by a saline purge, and subsequently a mixture of carbonate of ammonia, prussic acid, and infusion of cascarilla.

The treatment of chronic urticaria is most tiresome and difficult. One has to analyse carefully every function of the patient, and it requires no little patience to arrive at a distinct conviction that what we are doing is a reasonable plan of treatment. If there be mental disturbance, change of scene does good. Pyrosis, atonic dyspepsia, deficiency of bile, inaction of the liver, non-excretion of urea, uterine disorder, must be treated upon general principles. Generally speaking, it is possible to discover some one thing which taken internally evokes the urtication : it may be beer, or condiments of some kind. Where it appears that the functions of the body generally are properly performed, bromide of ammonium, or if the disease be periodic, quinine is useful. Aconite is another remedy, and arsenic is much vaunted; I do not know that the latter has done much good in my hands.

But in addition to the detection of particular causes of blood impurification, or of mischief in kidney reflected upon the skin, the general state of the patient deserves close attention. Many have been much depressed in mind. In others the general health has become disordered by want of rest, by dyspepsia of long continuance, or by residence in damp, ill-ventilated dwellings. Others are anæmiated, and so on. It is the duty of the physician to deal wisely with such cases, and oftentimes to alter the whole habits of the individual, with a view to restoring the tone which he has lost. In certain cases, change of air, cold bathing, iron, and strychnine may be necessary. I have had not a few American clients of late suffering from urticaria, in whom the continuance of the disease was clearly due to the practice of "bolting" their meals. The food was never properly masticated, and consequently not properly digested, at the same time that the urine was loaded with urates, and to an extent that surprised me. More careful and deliberate mastication, the avoidance of unwholesome dishes, and the use of the Turkish bath, with alkaline waters (Vals), happily seemed to act like magic in these cases, and prepared the way for cod-liver oil, steel, and quinine to fully consolidate the cure. In fact, given the sensitive state of the skin in urticaria, hyperæmia may be excited by a multitude of internal and external influences, connected in the former case with the most different states of general health and of functional derangements of organs, and it is the duty of the dermatologist to define and to defeat the influence of the particular excitant of the eruption in individual cases. The dietary of urticaria is a highly important matter. All rich, stimulating food should be avoided, together with sugar, salt meat, seasoned dishes, and beer and wines, if they the least heat the patients. But I have a word or two more to say with reference to the local treatment of these cases of chronic urticaria. The local treatment can but be palliative. For my own part I regard a free action of the skin as a whole, to be great gain and aid to cure in these cases, inasmuch as it necessarily relieves the skin of much fluid, and so diminishes the chances of hyperæmia, &c. But in the acute cases of urticaria the circulation is so active in the skin sometimes that any determination to it of blood specially brought about, is apt to make matters worse, and especially if perspiration fail to be induced. In chronic cases the matter is different somewhat, and I use vapour baths freely in chronic urticaria with the greatest benefit, taking care to apply some soothing application to the skin (such as oil or a calamine lotion) on the patient coming out of the bath. The bath may be taken three or four or more times a week.

B. URTICARIA IN CHILDREN, INCLUDING THE SO-CALLED LICHEN URTICATUS.

The clinical features presented by urticaria as it occurs in children are somewhat different from those observed in the adult, and for convenience sake I have thought it wise to deal with the matter in a separate section. In the first place the " wheals or pomphi" which characterize urticaria are not developed in the skin of the young to so great an extent as in the adult, and they are generally succeeded by the formation of papules in the seat of the wheals. There is sometimes more than mere serous effusion as the result of the local hyperæmia. The wheals are primary and the papules secondary. Hence the term *urticaria papulosa* not inaptly describes the urticaria in children. But inasmuch as itchy papules are developed in connexion with the urticaria of children—hence the term *lichen urticatus,* which I decline to use—and these papules are scratched and altered in aspect, so as to become "pruriginous," as it is termed (that is to say, the apices are marked by dark specks, which are small clots produced by the drying of the blood effused after scratching) urticaria in them possesses features not usually noticed in the adult. In the adult wheals rapidly come and go, and there is no continuous scratching of one part inducing excoriations and the like: but in the child persistent papules are formed, and these are changed by the continual scratching practised. Many of the subjects in whom these papules are formed are badly hygiened and badly nourished, and consequently ecthymatous pustules show themselves, whilst much pigmentary staining is also seen if the disease lasts some time. From what I have said it will be evident that urticaria in children is peculiar in that it is accompanied by the development of papules that become pruriginous in chronic cases and in badly nourished subjects. And it is very important to remember that the longer the disease lasts, the more likelihood is there that the *erythematous* will give place to the *pruriginous* phase of the disease. In other words, on tracing out the history of cases of chronic "lichen urticatus," which consist simply of pruriginous papules with intense itching, it will be found that originally they presented the features of ordinary urticaria, with simple papules. This, then, is my second point—that the features of urticaria in children differ according to the age of the disease. There is a third point of great importance in regard to the urticaria of children, and that relates to the cause. In some cases it is only secondary to scabies, and in others it is, I feel convinced, excited by the attacks of bed-bugs, in children who are not properly cared for. Now it is, of course, most important to determine the existence of scabies, because the cure of the latter is all that is required to rid the patient of the urticaria; but I shall refer again to this point under the head of diagnosis. In the following remarks I, of course, deal with uncomplicated *urticaria papulosa.*

Clinical Features.—If a child is brought to the practitioner in the early stage of the urticaria or "lichen urticatus," the mother or attendant will say that the child is greatly tormented with an irritation; it may be about the arms, or chest, or face, or more or less generally over the body. The irritation is greatest at night, and disturbs the child's rest. If the child be stripped one may find not much evidence of eruption, and the statement is made that it was very bad in the night or the first thing in the morning. The disease in fact possesses one of the special characteristics of urticaria—capriciousness; wheals or fugacious spots of erythema have formed but disappeared rapidly. In other cases scattered in greater or less amount over the body are red papulations, which are raised and feel hard in the centre, with a red halo, resembling in fact bug-bites. These may be interspersed with smallish wheals. These papules become excoriated and "pruriginous." Hence the patient's surface may be studded over with the fresh papules, and also old pruriginous papules. The fugitive wheals and red papules appear chiefly at night, at which time itching is peculiarly distressing. When the disease has lasted some time, the skin, in consequence of the plentifulness of the papules, may feel quite rough, uneven, and harsh. But generally, save in chronic cases, there is a history of interminglage of wheals and small erythematous patches; when the disease is chronic, the general characters are varied. The symptoms may get better and worse, the child having periodic outbursts of eruption; but I have seen a condition of things developed out of the acute stage exactly resembling the so-called *strophulus pruriginosis* of Hardy (see Lichen). It occurred in badly nourished and more or less strumous individuals. In these cases the "wheals" were wanting, and the disease answered to the description of "prurigo," but it possessed an anterior history of urticaria.

Cause.—Urticaria papulosa (lichen urticatus of children) occurs frequently, and in fact, as far as I know, almost entirely in hospital practice and amongst the lower order. I have seen it, of course, in the children of persons in good circumstances, but the fact remains that it is to be met with rarely in private and abundantly in hospital practice. Now I may mention, as throwing some light upon the nature of the disease, that some time since I made some observations upon the effect of an improvement in the personal hygiene of children upon the disease with which they are affected, with somewhat remarkable results. I admitted well-marked instances of the affection, both in its acute and chronic forms, into the children's ward of University College Hospital, and treated them with good diet and simple or alkaline baths. The cases, special attention being paid to cleanliness, got rapidly well. These same children were then sent home again, when the disease recurred in all its intensity, to disappear again at once on being taken into hospital, and to crop up once more on returning home, &c. The object of these experiments has been to show how large a part inactivity of the skin, uncleanliness, bad air, and the like, play in the intensification, if not the genesis of the disease, and in inducing that mal-nutrition which is so frequently evidenced in it. But then many children suffering from the disease under notice are really well nourished, and have plenty of flesh on their bones, and in these the disease never becomes secondarily "pruriginous." It does not appear that a badly nourished state of skin need be present; but that mal-hygiene is an exciting cause, if not the sole producer of the disease, I am confident. But there are other conditions that influence chiefly to aggravate the disease. Deficient urinary excretion is one, scabies is another; and I do verily believe the attack of bugs is another of very common occurrence indeed, but one that mothers as persistently deny as I affirm.

Disordered bowels is also a cause of aggravation of the disease. Occasionally one is puzzled at the obstinacy of the affection; fresh crops of wheals and fugacious papules spring up from time to time, and the disease is prolonged off and on for years.

Treatment.—From what I have said as regards the cause, the general indications for treatment may be readily comprehended. In the first place, the general hygiene of the children must be carefully attended to. The most complete cleanliness must be observed. The child should be made to breathe pure and not vitiated air; to have a thorough good bath and washing night and morning, and be given good and wholesome food; all causes of local irritation (the attack of bugs, scabies, &c.) must be detected and removed; the child should not wear flannel next the skin. Then it is advisable to soothe the skin with alkaline baths, followed up by application of some anodyne lotion. The action of the kidneys should be quickened, if need be, by bicarbonate of potash with or without the nitrate twice a day, the bowels being regulated, dyspeptic conditions removed, whilst the diet is to be such as sits lightly on the stomach, and is at the same time nutritious. The general health requires attention. Whenever ecthymatous or pruriginous features exhibit themselves, they should be regarded as indications for the exhibiton of quinine and steel, and cod-liver oil, or other appropriate tonics. Locally, it is well in acute stages to apply soothing remedies, such as emulsion of bitter almonds with a small amount of bichloride of mercury (gr. j—gr. vj to ℥vj) or warm lead lotion. For the chronic stages, I invariably use sulphuret of potassium baths in the proportion of ℥j to ℥ij to xxx gallons of water; I am quite satisfied with the effect. I give the bath twice or thrice a week, using an oxide of zinc lotion, to which I occasionally add a little liq. carb. detergens (ʒij—℥ss to ℥vj).

FOLLICULAR HYPERÆMIA.

It may seem somewhat strange that I should give a special description of hyperæmia of the follicles of the skin. But I do so with a very practical object in view. I find that hyperæmia of the follicles of the skin, referred to under Papulæ (the elementary lesions) is often confounded with diseases which it complicates, and it is important that this accident common to many dissimilar diseases and its true significance should be distinctly understood in relation especially to the matter of general diagnosis.

Whenever the skin is much irritated, and particularly if scratching is practised for the relief of itching, the follicles are apt to become congested. The result is that red hyperæmic papules are formed by erection and turgescence of the upper part of the follicular walls. If the hyperæmia persists long enough a certain amount of hypertrophous growth may take place as a consequence of the hyperæmia, and solid papules may then form at the hair follicles which may from being scratched become covered at the apex with scales of dried blood that has been effused from the excoriations; in fact, the papules become pruriginous. But this is only a secondary result, not a primary condition. Now it will be at once evident that this accident of follicular congestion must be found in a variety of diseases, and should be carefully distinguished from primary mischief, though in itself it indicates an excessive irritation of the skin.

This follicular hyperæmia is accompanied by hyperæmia of certain of the papillæ, and papules are formed by hyperæmic papillæ, but the mass of the papules referred to are formed at the hair follicles. In eczema nothing is more common than to notice follicular congestion around the eczematous patch, particularly about the legs, and this condition is oftentimes most erroneously called *eczema papulosum*. The papule of eczema is formed in the papillary layer by the upraising of the epidermis by fluid, and it is potentially a vesicle. In urticaria, the scratching induces the same follicular hyperæmia which is also seen in scabies, prurigo, and phthiriasis. I have seen it in chloasma, &c. If the hyperæmia is followed by deposit of lymph, a condition follows which is one of the things termed lichen pilaris (see chap. ix.); but if the reader understands that follicular congestion and its results may exist under any conditions in which hyperæmia is present and scratching is practised, and that it is to be regarded as an index of an irritated state of skin, it is quite unimportant what name it be given. In fact, it is the sign of a "scratched skin," and should be always recognised as such.

As the term "pruriginous" implies some relationship to prurigo, I much prefer the expression "pruritic" eruption for the state of things above described.

PELLAGRA, OR ITALIAN LEPROSY.

This disease is common in Tuscany, Lombardy, Venice, Piedmont, Parma, Modena, Ferrara, South of France, in some parts of Spain, and Corfu. It attacks the poorer population to the extent of four or five per cent. in the districts where it is most prevalent. Pellagra is a general disorder of the system; the external manifestations are only a part of graver changes in the system at large; but as the erythema which accompanies it is the pivot of interest for the dermatologist, I deal with the disease here. The symptoms of the disease may be arranged in three groups:—(1) Eruption of an erythematous type; (2) Signs of diminished general power, and failure of nutrition; (3) Cerebro-spinal symptoms.

After exposure to the sun, the pellagrous subject feels in some part of his skin, upon which the sun has played, a tingling sensation; at the same time he becomes weak, feverish, the appetite is faulty, digestion is inactive, and diarrhœa troublesome, though these latter-named symptoms perhaps mark rather the second stage of the disease. The cerebro-spinal symptoms, the result of inanition and the morbid blood-state that finally ensue, are headache, giddiness, impairment of special senses, cramps, convulsive movements, with loss of muscular power. The patient dreams, and is despondent.

The eruption makes its appearance on the exposed parts—*e.g.*, the back of the hands, the outer part of the forearm, the forehead and sides of the face, the upper part of the chest and the feet, and usually in the spring. It is supposed to be excited by the sun's rays. In the men who wear large straw hats the face is not so greatly affected, but the uncovered faces of the women suffer more. Red spots first appear, which quickly become dark and desquamate; the surface beneath the scaly covering is red, thickened, rough, and fissured; there may be pain; and little bullæ, it is said, may form, which die away and are replaced by bluish stains. In some cases the epidermis is shrivelled, and as if frozen or scaly. The eruption subsides in the winter. In the ensuing spring the whole thing is exaggerated, increasing from year to year; each year the intermittence is marked by the increasing permanence of the discoloration. Lombroso notices the frequent occurrence of subcutaneous extravasation of blood in the form of petechiæ on the belly and chest. He notices also rigidity of the extensor muscles. In the latter stages these different symptoms intensify *pari passu.* The patient emaciates, losing as much as 25 per cent. of his physiological standard weight. Phthisis or anasarca may set in; the skin becomes unhealthy, "callous;" whilst delirium, suicidal mania, melancholy, epilepsy, idiocy, and hebetude, have each their victims. A typhoid condition is the final result, and death ends the scene.

Dr. Lombroso depicts a peculiar form of pellagrous mania characterized by unusual precocity and activity of the intellectual functions in connexion with an arrest of the growth of the body, and the organs of generation especially.

Pellagra has an average duration in fatal cases of five years. Sporadic cases may have occurred in England; they take the form of an erythema about the back of the hands, with cerebro-spinal symptoms and debility.

Etiology of the Disease.—Now, much has been done of late to place us in a position for forming a good estimate of the character of the disease. Its frequency is known: in 1830 statistical observation showed that 20,000 out of a million and a half of the Italian population were affected; this is somewhat about one-sixtieth of the people. It appears that in about 90 per cent. the pellagrous are poor peasants, in about seven per cent. artizans, and in three per cent. they follow other occupations.

Opinion differs as to the influence of hereditary tendency, because the members of a family are generally placed under exactly similar circumstances—those very ones which probably engender the disease. Calderini noticed in 184 families comprising 1319 members, inheriting predisposition, that 648 were diseased, 671 healthy. Pellagra is said to be the result of insanity; this has been especially insisted upon by Billod. It appears that in Billod's asylum (St. Gemmes), patients are affected by pellagra, whilst the inhabitants of the village near (1700 souls), and those of the entire district (22,000), are free from it. But it has to be shown that the inmates are not under the influence of exceptional conditions. It *is* a fact that the insane are affected. Dr. Landouzy determined this question by a special journey through Spain. He visited 44 asylums, in which were 22,873 lunatics, but of these only 73 were pellagrous. Pellagra, says Dr. Landouzy, in asylums, is only a matter "of general hygiene and alimentation." During the five years ending 1861, only 310 cases of pellagrous patients have been admitted into the San Servolo at Venice—82 maniacal, two monomaniacal, 95 melancholic, and 130 demented. Comparing these figures with the statistical information already quoted, as to the frequency of the disease amongst the general population, it would seem that no excessive proportion of pellagrous persons exist amongst the insane who are attacked in common with those amongst whom they live; and M. Brierre de Boismont[*] has recently given it as his opinion that the pellagra is not due to insanity. The converse proposition is however true. In about 9 per cent. the pellagrous have some definite form of lunacy. In the *Annales d'Hygiène Publique et de Médecine Légale,* Oct. 1866, is an article by M. Vernois, in which it is said that in the insane a cachexy is induced like the pellagrous, but the truly pellagrous cachexia only occurs in those who have eaten diseased maize, of which I shall now speak.

The cause of the disease that finds most favour at the present time is the use of diseased (ergoted) maize, as food by the people. Now, it has been objected that pellagra is not known in parts where maize is largely used. For example, in Southern Italy, Sardinia, and Burgundy, the people are not pellagrous, though they use maize largely. This may be in part due to the use of a mixed diet. But it is also asserted that where pellagra is present the maize used is diseased, and where the disease is absent, the maize is sound and unaffected. So that those who dry their maize, and keep it dry, escape disease, whilst others even in the same district, who do not properly preserve maize, may be affected. This seems to have been made out. Prof. Lombroso[†] points out particularly that the pellagrous are the poor of the inhabitants of the country; that pellagra is diffused in direct proportion to the cultivation of maize, as especially exemplified in the case of Brescia and Cremona. Generally after wet and unhealthy seasons, the grain is liable to be attacked by a fungus, the Sporisorium maidis; the maize, if it be not properly dried, undergoes change by the action of the parasite, and undoubtedly pellagra is most common after wet and unhealthy seasons. But it is still asserted that part of the cause is poverty, misery, bad hygiene, malarious atmosphere, bad water, and uncleanly habits—and these must *deteriorate* the general health—together with the exposure to the sun and the dry atmosphere of the summer time. Unhealthy seasons affect man as much as the vegetable world; and the diseased maize, if it be not the efficient cause, is a certain index that the atmospheric and other external conditions that play upon man are none of the best.

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[*] Annales Médico-Psychologiques, Journal de l'Aliénation Mentale et de la Méd. Légale des Aliénés, Sept., 1866.

[†] Giornale Italiano delle Malattie Venerée e delle Malattie della Pelle. Milano, 1868, Gennaio e Febbraio.

I doubt not, however, that pellagra is one of a class caused by eating diseased grain, including ergotism from rye, pellagra from maize, &c.

The French Academy of Medicine awarded a prize in 1864 to M. Roussel* and an accessit to M. Costallat for certain theses which went to show that pellagra was unknown till the introduction of maize, and that the use of diseased maize was the real cause of pellagra. But a most interesting account of the disease, as it occurs at Corfu, has been recently given by Dr. Pretenderis Typaldos, the Professor of Medicine at the University of Athens, and as it confirms entirely the prevailing opinion as to the cause of pellagra, I cannot avoid summarizing it. Pellagra is said by Dr. Typaldos to be of recent origin in the island. In 1839 one case was seen by a practitioner; several in 1858; in 1859-60-61 48 cases were collected. The disease exists in 27 out of 117 villages, containing 15,458 inhabitants. The disease in one village is in the proportion of 1 to 1218; in another 19 to 480 of the population. Dr. Typaldos notices that the disease exists amongst the very poor, whose staple diet now is bread prepared from Indian corn, which is called "barbarella." The supply is prepared oftentimes for a week. "When fresh cooked it is soft and pleasant to the taste, but when dry, it is very heavy and indigestible. Of the persons whom Dr. Typaldos found to be labouring under pellagra, all without exception had lived upon this diet, either almost entirely or in chief part; and he ascertained that the prevalence of the disease corresponded in the different villages to the extent with which maize constituted the food of the peasants. Thus, in some localities they entirely live upon or have in addition to maize, bread made with sorgho (holcus sorgum), rye, rice, or wheat, and he found that when such grains are used the people wholly escape or suffer only slightly from pellagra. The author further contends that it cannot be in consequence of the small proportion of the azotized elements in Indian corn that the grain is injurious, for it has been shown that when rye, rice, or sorgho are used, the population do not suffer from pellagra, though those grains are still more deficient in azote than maize. He finally arrives at the conclusion, that the essential cause of the disease is the consumption of maize which has been imperfectly ripened or has undergone changes after being gathered, thus adopting the views of Ballardini, as advocated in the thesis of M. Roussel, and described by Dr. Peacock in a former article of this Review."* Dr. Typaldos explains the recent occurrence of pellagra in Corfu by the fact within the last thirty years in Corfu the vine has been cultivated at the expense of the maize, which in consequence is largely imported from Albania, Romagna, and Naples. This is, however, as good as that grown in Corfu; but grain is also obtained from the Danubian provinces, and as it has to undergo a long sea voyage it is considerably damaged and often mildewed. That from the Danube constitutes by far the largest part of the grain used in the island. Much of the grain sold is diseased, and those are specially pellagrous who use it. Dr. Typaldos finally remarks, that in 1857, a cold and wet season prevailed in Corfu, the grain was imperfectly ripened, and an epidemic of pellagra followed amongst those who consumed the unwholesome grain.

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* Traité de la Pellagre et des pseudo Pellagres, par MM. Roussel. Paris, 1866.

Morbid Anatomy.—Our knowledge on this point is deficient. The brain is atrophied, the arachnoid opaque, whilst there are collections of yellow pigment masses on the capillary walls; the spinal cord is congested, and serosity is effused around it; the liver and kidneys are fatty, the lungs congested, and the tissues generally anæmic, and there is thinning of the mucous membrane of the intestinal tract, and oftentimes ulceration.

As to the nature of the disease, if altered maize be the cause, it is "an ergotism." I could not at one time shake off the impression that malarial influences have something to do with the cause, but I admit I had no facts to go upon.

Prognosis.—The rate of mortality varies much in different districts, as greatly as the frequency. Ballardini states that in the Milanese districts 78 per cent. get well, 13 are uncured, 9 have mental disease, 6 die from natural causes, and a few are suicides.

Treatment.—This is plain; avoidance of ergoted maize, change and variety of diet, the use of wine, and removal from pellagrous districts—Ballardini recommends the latter strongly—quinine and iron tonics; avoidance of exposure to the sun, and an improved hygiene generally. The reader who is interested in the subject will find a good article in the *Giornale Italiano delle Malattie Venerée e delle Malattie della Pelle* for April, 1870, by Prof. A. Michelacci, on the therapeutics and prophylaxis of the disease.

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* Brit. and For. Med.-Chir. Review.

MEDICINAL RASHES, OR ERUPTIONS THE DIRECT RESULT OF THE ACTION OF DRUGS.

The eruptions of the skin produced by the administration of medicinal substances, in many cases erythematous, are not a little important, and the dermatologist should be fully acquainted with them. I may refer to them here for convenience.

ARSENIC.

Arsenic.—I have never seen any eruption like an eczema induced by this drug. But I imagine that the drug may induce hyperæmia of the skin. This hyperæmia may be limited to the follicles, and in this case a papular rash appears about the face, arms, neck, and hands, or it may take the form of erythema and puffiness of the face and eyes, with much itching, or of erythema of the palms of the hands succeeded by induration. I have also seen pityriasis rubra develop when arsenic has been freely pushed for the cure of psoriasis. According to other writers it may excite herpes zoster, but I am by no means sure that the zoster is not a coincidence. When handled it produces ugly ulcerations, as in artificial-flower makers. It is contained in certain dyes, used for socks, &c., which excite when worn next to the skin very severe eczema in some cases, and especially in hot weather.

IODINE.

Iodine when given internally may excite an erythema of the face.

IODIDE OF POTASSIUM.

Iodide of Potassium in some cases is followed by the occurrence of petechiæ, in others by boils or slight acne. Of this I think there can be no doubt.

IODIDE OF STARCH.

Iodide of Starch.—When this has been very freely used to extensive syphilitic sores I have seen it give rise from the absorption of iodine, I take it, to a smart attack of urticaria. I remember one case in particular, in which urticaria of the limbs and back was caused in this way. Though it is true the erythema was very persistent, yet wheals were present and capricious in their development and stay.

TAR.

Tar.—The development of an eruption on the skin, which takes the form of an eczema or an acne (tar-acne), as the consequence of the internal or too free external use of tar is accompanied mostly by symptoms of quick pulse, fulness in the head and stomach, high-coloured and scanty urine, which gives out the smell of tar on the addition of sulphuric acid. Rarely an eczema may be acutely developed, but the tendency of tar, used for some time externally, is to give rise to an acne. At first the skin is dotted over with what are apparently comedones (acne punctata). These spots then inflame, and develop into regular acne spots. This form of disease is induced by the local action of tar vapour, an occurrence Neumann has noticed in tar manufactories.

BROMIDE OF POTASSIUM.

Bromide of Potassium when exhibited freely produces eruptive manifestations of different aspects, but all arising from stimulation of the sebaceous glands. The matter has been most carefully investigated by M. Voisin,* who speaks of five phases. I can confirm M. Voisin's observations. In the first place there is ordinary acne indurata, chiefly seen on the face, chest, and back, and sometimes accompanied by much erythema and some feverishness. Lymphatic and sanguineous persons are chiefly liable to be attacked. This is the commonest form of eruption:—"The second form of eruption given by Voisin as occurring six times in ninety-six epileptic patients who were under the bromide treatment, has, 'as far as his knowledge goes,' 'no analogy in the known forms of skin disease.' It appears in the form of *oblong or roundish swellings on the lower extremities, of a rose or cherry-red colour,* which then become yellowish, in consequence of certain millet-seed-like yellow prominences appearing upon them, which latter are aggregated acneiform pustules. These roundish swellings have a kind of depressed umbilicus in the centre; their base is very hard; they are unaccompanied either by swelling of the lymphatic glands or by feverish symptoms. It is seldom that more than two or three of these swellings are observed on a patient at one time. They are very painful on movement, only their centre is insensible (even to pricking, cold, &c.). The pains are so severe that the patients are unable to move the legs. Voisin relates the cases of two women who, on account of this last symptom, could not leave their rooms for several months. These swelling disappear when the fluid they contain trickles out; but this only occurs very slowly, the time varying from a month to a year; then the swellings become covered with thick scabs, which remain until the tumefaction no longer exists; when they have disappeared, persistent yellow scaly patches remain. These swellings sometimes become developed very rapidly, in three or four days; they occur more frequently in winter."

Now I can explain this eruption. The truth is that the oblong swellings are produced by a crowding together of enlarged sebaceous glands (acne-spots) distended with sebum, which is of a more or less milky aspect. The "yellow-like prominences" described by Voisin are composed of sebum confined beneath the epithelial layer, and distending the sebaceous duct and gland. In truth the disease consists in enlargement, in close aggregation, of the sebaceous glands in connexion with sebaceous flux, the sebum being retained in the distended follicle. It is almost of the nature of a crowding together of molluscous tumours.

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* Société de Médecine de Paris. Mémoire sur les Eruptions Cutanées causées par l'usage interne du Bromide de Potassium. Voisin, *Gazette des Hôpitaux*, 1868, p. 603.

In the third form patches like those of erythema nodosum occur. It seems to be a kind of threatening acne with surrounding redness, of the nature almost of urticaria.

In the fourth form furunculi and ecthymatous pustules are present.

In the fifth, observed in one case only according to Voisin, the eruption may be an eczema, in conjunction with pityriasis of the scalp; but I suspect this is merely seborrhœa (sebaceous flux), but without retention of the sebum in the follicles.

BELLADONNA.

Belladonna produces a rash of rosy hue, fever, and a dry throat, together with dilated pupils—whatever may be said to the contrary. Dr. Fuller has denied this, but I cannot but think, especially having regard to the large doses he has given without effect, that his extract has been inert. I am confirmed in my opinion by several communications from eminent physicians.

HYOSCYAMUS.

Hyoscyamus.—Dr. Robert Craik* describes a case in which a red rash like scarlatinal eruption followed the eating of "herbs" in a child, which herbs turned out to be the leaves of the hyoscyamus. I have no knowledge of any similar occurrence.

COPAIBA.

Copaiba.—I have seen a good many cases of copaiba eruption, which varies in aspect in different cases. Judd in his work described it as a rosy erythema, of "pumiceous" aspect, the skin looking as though it had been bitten by insects. As far as I have had opportunities of noticing the operation of copaiba on the skin in the production of actual eruption, it has seemed to me that the eruption is preceded and accompanied by the most intense itching, and the patient if at all feverish is not bodily ill. The eruption may be partial, limited to the two forearms, or the thighs, or the trunk, or more or less general. It is hyperæmic, of a rosy hue; usually it is like an urticaria without wheals, and it may be made up of circular bits. But if the hyperæmia is followed by serous effusion, the eruption may be like an erythema papulatum, with large flattened rosy-coloured papules in some parts, and an erythema in others. I have seen one part of the rash like measles, and another like scarlatina. But this purely hyperæmic condition was an early one. Generally, however, there is a little serous effusion that elevates the hyperæmic parts into urticaria-like blotches, or large flat papules interspersed over the reddened surface. But it is the intolerable itching, the similarity to urticaria without wheals, and the pretty general distribution, with the related pyrexia, that is peculiar about the eruption, which occurs in those who have gonorrhœa, and are taking copaiba for its cure. Hardy* describes a case in which bullæ developed out of the erythematous redness. There is a good illustration of this in the Dermatological Museum of the Royal College of Surgeons.

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* Montreal Medical Chronicle, Aug. 1858.

The treatment of the disease consists in the abandonment of the copaiba, and in the prescription of alkaline baths, with oxide of zinc lotions and the free use of diuretics.

ARNICA.

Arnica may produce erythema and swelling of the part to which it is applied, or it may excite a real eczema.

SULPHUR.

Sulphur in some cases when used locally gives rise to a dry, dirty aspect of skin, occasionally to abortive formation of vesicles, or rarely an artificial eczema, with subsequent pityriasis, accompanied by much itching. These induced states are often mistaken for the continuance or increase of the original disease against which the drug has been prescribed, mostly scabies, and it demands the most soothing treatment. A recent case I saw was that of a gentleman who had scabies; he had been ordered a series of sulphur baths, which set up an artificial eczema, with ecthyma from the scratching. This rapidly got well (sooner than usual in these cases, for the sulphur impregnates the system) by demulcent baths and soothing unguents. Sulphur baths should be used with gentleness, and I think the old-fashioned villanous compound sulphur ointment less vigorously than is customary, for I feel sure that it is often continued long after the original scabies is cured, and upon which the secondary effects, erroneously regarded as the thing to treat, depend. I have seen grievous errors committed from a want of attention to the facts I have pointed out.

CROTON OIL.

Croton Oil.—When croton oil is applied to the skin—ex., the epigastrium, it sometimes becomes absorbed, and induces considerable flushing of the face, and in other cases extensive erythema of the same part. This may be due at the same time to the patient touching the face with the hands, to which croton oil adheres, but it also results from the absorption of the oil.

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* Pemphigus Aigu Consécutif à l'Administration du Copahu. Hardy, *Gaz. des Hôpitaux*, 1869, xxxvii. p. 141.

CHAPTER IX.

PLASTIC OR PAPULAR INFLAMMATIONS.

GENERAL REMARKS.

I use the term plastic inflammation to signify, in contradistinction to catarrhal inflammation, a morbid condition characterized by the deposit of lymph and probably the formation of a certain amount of new tissue, but without any serous effusion or pus production or implication of the subcutaneous tissue. This form of inflammation, in fact, to use clinical terms, shows itself by the formation of solid fleshy papules as primary phenomena; hence the term "papular inflammation."

Now Willan included under the term papulæ, three diseases—viz., lichen, strophulus, and prurigo. His strophulus is a mixed affair, as I shall show further on in this chapter, and does not rank here. His lichen I retain. It is accompanied by dryness, and more or less roughness and general thickening of the skin, in addition to the formation of papules. It never has any "discharge" about it, and is caused by the effusion of coagulable lymph into the papillary layer of the skin. But under the term lichen, moderns include two new diseases, lichen planus (Wilson), the same disease as the lichen ruber of Hebra, and lichen scrofulosorum (Hebra). Willan's prurigo included phthiriasis, or the disease due to the presence of the pediculi vestimentorum, in addition to what I regard as true prurigo—viz., a disease in which fleshy papules accompanied by a general state of mal-nutrition, and severe and often intolerable itching, occur as the essential disease.

Plastic inflammation then, in my opinion, includes two diseases, lichen and prurigo. It has been held that prurigo should be ranged with neurotic disease together with urticaria, herpes, and other maladies; but though the nerves in prurigo play a very prominent part, it is uncertain what part at present, whilst recent pathological researches show that prurigo is essentially characterized as regards its morbid anatomy by chronic inflammatory changes. I therefore place prurigo in its present position tentatively.

If the reader will compare the following descriptions with that found in books, he will find that I have simplified matters considerably by reducing the varieties of the diseases referred to.

LICHEN.

General Features.—This disease is essentially chronic and non-contagious, characterized by the appearance of little papules, about the size of millet-seeds, slightly red, or of the same colour as that of the skin, at first distinct from, though close to, each other, and being in some cases subsequently closely grouped together. The former distribution is often seen on the inner, the latter on the outer aspect of the limbs; the papules feel hard and cannot be removed by pressure; if they are scratched, in some varieties, a little clear fluid may ooze out. The skin generally is dry and thickened; there is considerable itching or burning. Once formed, the papules undergo little change until their disappearance; but then scales form upon them, and these are dry, very fine, and greyish. The disease has a great tendency to recur, to chronicity, to be complicated by other forms of disease, and to spread from one region to another. It may be acute or chronic. The seat of the papules may be limited, or absolutely general.

There are three chief forms of lichen :—

They are—(A) lichen simplex.
(B) lichen planus, or lichen ruber (Hebra).
(C) lichen scrofulosorum.

These must be considered separately and in detail.

A. LICHEN SIMPLEX.

Now there are some who do not introduce this variety into their systems, believing that the disease which Willan described as lichen simplex is nothing more than a stage of eczema. With this view I do not agree, because it is clinically untrue—at least so far as English practice is concerned. In the first place, Willan's lichen is quite distinct from the two varieties, lichen planus and scrofulosorum. Further, Willan's lichen included certain diseases which have no relation to lichen; but that there is a disease which answers to his description of lichen simplex, I am quite sure. No doubt the idea that eczema and lichen are the same arises from the fact that the papulation of eczema has been confounded with Willan's lichen simplex. But I will proceed to describe what I understand by lichen simplex, and point out afterwards where certain of the items which make up Willan's lichen should be placed.

Lichen simplex includes as its sub-varieties, L. circumscriptus, L. agrius, and L. pilaris.

Lichen simplex itself is often seen in the summer, sometimes recurring in the same person several times; the papules are flesh-coloured, red, smallish, sometimes very minute, and more or less pointed, lasting a week or so, and followed up by the development of others; the papules are usually seen on the back of the hand, the outer aspect of the forearm, the neck, and the thighs. They are accompanied by a good deal of itching. The papules disappear by resorption, and never become vesicles or pustules. This lichen may last for weeks and months. The disappearance of the papules gives rise to a little desquamation. The skin generally is dry and thickened. The disease is rare. *L. circumscriptus* is the name given to the disease when the papules are collected together into little round or roundish elevated patches; the border of the diseased patches in such cases is well defined and papular, the surface elevated, rough and dry to the feel; its area increases by circumferential enlargement, and its centre presently clears somewhat; there are generally several circles, and their most usual situation is the back of the forearm or the hip; at other times the back of the hand or calf may be affected, or the inside of the thigh. The patches after a while get more or less scaly, or inflamed and cracked, simulating eczema, but never actually discharging; or in consequence of the centre healing, assume a circinate form; but the history, absence of moisture, and the dry red roughened base, are distinctive. When several patches run together and form bands as it were, the disease is named *lichen gyratus* (Biett) : this is nothing more than the coalescence of several circles of lichen circumscriptus, and it is a fanciful designation. *Lichen agrius,* or the inflamed form of lichen, differs from the above in the presence of secretion, and hence approaches eczema; but it is, as its name implies, an acute, inflamed lichen. The local manifestation consists of clustered or closely-packed red papulæ, accompanied by intense itching and burning, causing the patient to scratch violently; this in its turn sets up additional irritation, the torn and excoriated papulæ are inflamed, and exude a thin fluid; the whole patch thickens, fissures, and becomes covered over with *thin scales,* not the yellow puriform scales of eczema. Lichen agrius may also arise, by inflammation of the chronic stage of any of the other forms of lichen, and not primarily as an acute form. The acute state lasts about ten or fifteen days, the chronic weeks or months; this variety of lichen is observed about the back, neck, legs, arms, and shoulders; it constitutes one aspect of grocers', bricklayers', and bakers' itch. Vesicles and pustules may however form; and then there is an inflamed, raised, reddened, excoriated, discharging, fissured patch, the seat of intense and often intolerable itching and burning, made worse by stimulation of all kinds, especially the warmth of bed. This is no doubt a mixture of eczema and lichen, and is rightly termed eczema lichenodes or lichen eczematodes. The disease either subsides or increases by the development of fresh crops of papulæ. In true lichen agrius, the papules form the prominent feature, and are a primary phase, the eczematous aspect being engrafted upon the lichenous disease.

Now lichen simplex consists, in an increase of blood in the papillæ, and some escape of coagulable fluid into the tissues, in its simpler form, and that is all. The reader will not confound it with that condition of eczema in which papules are produced by serous effusion uplifting the cuticle, this being followed by the production of pus, &c. Nor is it the same as follicular congestion (see p. 127). But it is necessary that I should refer to some other conditions that are regarded as falling under the head of this lichen simplex. First must be mentioned,

Lichen Pilaris.—Much dispute has arisen in regard to this variety. Occasionally one sees, either alone or in conjunction with ordinary lichen, or other disease where the skin is hyperæmic, little elevations like papulæ, which are however seated at the hair follicles; the hair in fact piercing the centre of the papule. A distinct lump is felt by the finger. There is no doubt but that hyperæmia of the follicular plexus is followed by fibrous deposit outside the follicle, forming a papule. It is more than hyperæmia alone. There is no reason why in ordinary lichen this should not happen, in the same way that hyperæmia and enlargement of the follicles are seen as an accident and accompaniment of other diseases. When the follicular hyperæmia goes beyond mere hyperæmia, as it were, and there is inflammatory deposit, then solid papules are formed at the hair follicles and constitute lichen pilaris. Indeed any irritation may induce this "lichen pilaris," and it is sometimes seen in chronic scabies. Lichen pilaris then is "fibrous inflammation" seated at the upper part of the hair follicles, the effusion of plastic lymph taking place around the follicular walls, and producing, according to its degree, more or less well-marked and distinct papulation, each elevation being perforated by a hair. It must not be confounded with pityriasis pilaris, which is merely a desquamation of cuticular cells into, and distending, the hair follicles, preventing the formation of the hair, and producing a blocking-up of the follicles, the collected cells forming "a knot" in the upper part of each follicle, a state of things that may occur after pityriasis rubra (see chap. xiii.), or as the result of an inactive state of skin, especially about the thighs, and which latter only needs the free use of soap and water for its removal. Lichen pilaris in the simple form above described must not be confounded with lichen planus, in which solid papules are formed at the hair follicles, for in this latter case the papules are seated at the deepest part, and are accompanied by the formation of new tissue, by hypertrophy of the cell elements of root sheaths, the disease having a peculiar history and course of its own.

Lichen tropicus is a disorder of the perspiratory follicles, and will be described in dealing with the diseases of these parts.

Lichen urticatus has been described under the head of urticaria in children (see p. 124). The lichenous papules are secondary to development of urticarial patches.

Lichen lividus is a purpura (see chapter xvii.)

Lichen simplex, then, with its scattered papules, together with its sub-variety *Lichen circumscriptus,* in which the papules are crowded together so as to form patches; *Lichen agrius,* which is an inflamed lichen; and *Lichen pilaris,* seated at the hair follicles—fall into a group under the head of simple or ordinary lichen.

Pathology.—Now one of the broad distinctions between lichen and eczema is the entire absence of discharge in the former and its presence in the latter, and it has seemed to me that the skins of lichenous patients, as I describe them, are not disposed to become eczematous. Instead of being pale, thin, and irritable, they are muddy-looking, tough, thickened, and not disposed to discharge. Very many different opinions have been held as to the anatomical seats of the papules. It has been said that the little solid elevations of the skin called papulæ are seated at the sebaceous glands, but such are not lichenous papules. Others affirm that they are due to hyperæmic follicles, with subsequent effusion, this is so in lichen pilaris; others that they are enlarged papillæ of the skin. I think they are produced by hyperæmia and effusion of coagulable lymph in the papillary layer; and this effusion is not limited, but is general, so that in well-marked cases of lichen, as I describe it, the whole integument as before remarked is dry, harsh, discoloured somewhat, tougher than usual to the feel, contrasting strongly with the thin, light, delicate skin of an eczematous subject. As far as microscopic examination has gone this has been shown to be true, for the vessels of the papillæ are dilated and the papillary layer itself hypertrophied. In lichen the irritation set up induces turgescence of the sebaceous and other glands and follicular hyperæmia, especially in lymphatic subjects: but these phenomena are only accidental to true lichen.

Prognosis is not grave. Lichen circumscriptus and lichen agrius are often very obstinate, so is so-called lichen pilaris and lichen occurring on the face. As a rule, the simple forms get well, with proper treatment, in two or three weeks.

Causation is supposed primarily to be due to the existence of a peculiar (dartrous) diathesis, but of which I know and can comprehend nothing. Lichen appears to be common in those of nervous temperament and in summer time. It attacks all ages, and is evoked by local and reflex irritation, by a deficiency of alkali in the system; irregularities—mental, physical, alimentative, &c.; hereditary tendency; certain occupations—*e.g.*, cooks, bakers, grocers, bricklayers, &c.; by hot climates. Similarly in this as in other diseases—a predisposition to disease shows itself by tangible evidence whenever any determining cause unbalances the resistant power of the system.

Diagnosis.—There are some difficulties here. The chief points to remember in regard to lichen are the dry and thickened state of the skin and the presence of papules, which are always to be found, if the disease is in patches, at the extending edge; the hard feel of the papules, and their tingling or itchiness. Lichen simplex and scabies may be confounded. *Lichen* is uniform, *scabies* multiform. In *scabies*, besides papules there are vesicles, often pustules, and the papules are not so closely aggregated; the eruption also is in the line of flexion, not, as in lichen, in that of extension—*i.e.*, lichen is seen chiefly on the outer aspect of the arm; it may occur on the back of the hands and fingers, but it is not interdigital. Lichen simplex never occurs in the feet; it is common on the face; scabies is not. In scabies too there is the characteristic vesicle and sillon, whilst the disease is contagious and easily removed by sulphur treatment. It is also seen in the seats of pressure, rarely above the level of the mamma, and not associated with the peculiar dry thickened state of skin, as is the true lichen simplex.

Phthiriasis may simulate lichen, but it is associated with an unhealthy, relaxed, muddy, dirty state of the skin,—flabby is the word; the papules (which are pale) are fewer in number, and each is marked at its apex with a dark black speck (dried blood) effused as the result of scratching. The skin is not thickened and dry, as in lichen, nor is there any attempt at scaliness, as in lichen, nor aggregation of papules into patches or groups. Phthiriasis is essentially a disease of advanced age. It occurs in the uncleanly, and there is often a peculiar urticated state of skin, seen very markedly on the back and chest, produced by an exaggeration of the spaces enclosed by the normal furrows. Phthiriasis does not occur about the face; the sensation is one of formication, and is altogether out of proportion to the local disease, whilst pediculi may frequently be detected in the folds of the linen.

Lichen agrius resembles *eczema*, but the latter is moist and discharging, occurs in delicate and thin, not in harsh dry skins; again, the history and edge of the patch in lichen point to the existence of papules; then the patch is much thicker and harsher than in eczema, and wants its thick yellow crusts: the latter in lichen are thin, pretty few, and "flimsy."

Lichen circumscriptus, with its papules, ought not to be confounded with vesicular or furfuraceous tinea circinata, in which a parasite is found; nor with *psoriasis*, which is entirely devoid of discrete papulæ, and presents peculiar white imbricated scales, and possesses as its selective seats the points of the elbows and knees.

It is important to remember that scabies may be complicated with lichen, and the latter may be set up as the result of irritation in scabies. One sees this state of things very frequently in the hot season—the irritation of a few scabious spots bringing out a pretty general lichen.

Treatment.—The early stages of lichen, when accompanied by febrile symptoms, may be treated upon general principles. Salines, aperients, tepid alkaline baths, to which may be added bran, gelatine, size, and the like, are proper. In lichen agrius, poulticing, rest, and lead lotion, or such ointments as are given in Formulæ

57, 59, 67. To allay itching at this stage, besides the baths, ointments of cyanide of potassium (54-55) may be used in the proportion of three or more grains to an ounce of lard; oxide of zinc, borax, of each a drachm, camphor ten grains, and adeps one ounce; or bichloride of mercury or borax lotion. Then, when the disease has passed the acute stage, the patient must be treated according to his constitutional bias. In a goodly number of cases it will be noted that the patient is overworked, worried, not taking sufficient food and rest, is annoyed by dyspepsia, or is looking thin and anxious. In such cases a change from any depressing overwork, the correction of acid or atonic dyspepsia, mild aperients, and a course of mineral acids and bitters, will speedily be attended with benefit. The local treatment consisting in the use of mild unguents (ung. plumbi) or zinc and dilute nitric acid lotions.

In other cases, where the urine is loaded, and the skin generally is discoloured and harsh, alkalies are of service, and may be given with ammonia and bitters, together with alkaline baths and borax lotions. In other cases it is apparently impossible to say that anything beyond general debility exists; under such circumstances arsenic is to be employed. In lichen circumscriptus again, an alkaline course is beneficial, and if there be any tendency to rheumatism, iodide of potassium, with quinine, may be given in addition; and in lichen agrius gouty tendencies must be met in the first instance by colchicum. In the former variety of lichen weak mercurial ointment, the citrine ointment diluted four or six times, or the ammonio-chloride (grs. v to ℥j) or acetate of lead, iodine, iodide of sulphur, or sulphur ointment, according to the induration and chronicity of the patch, and in the latter variety maceration with glycerine, borax ʒj to ℥j of adeps with glycerine, or ammonio-chloride of mercury ointments, and lastly, painting with a solution of nitrate of silver, or glyceral tannin, are of use.

When the disease is very chronic, and there is much thickening of the skin in general, and in lichen pilaris, a course of bicyanide of hydrargyrum, in the same doses as the bichloride, with bark, will speedily cause resorption of the plastic material poured out into the derma; and local stimulation of the skin with sulphur vapour baths may then be employed. But, indeed, no one plan can be laid down for lichen. Each patient must be treated according to his individual peculiarities—one man will need cod-liver oil, another steel, a third aperients, a fourth arsenic, a fifth colchicum, and so on; but the tendency should be in the early stage to use alkalies, and in the later stages arsenic. The too free and early use of stimulants to the skin should be avoided—emollients and alkaline baths being most fitting for recent disease. In all cases stimulants are to be dispensed with entirely if possible, and the food is to be unstimulating. A very good form of local application for itching is half a drachm of dilute hydrocyanic acid, Brandish's solution of potash half a drachm or a drachm, and six ounces of rose water. (See Formulæ, Nos. 40, 41, 46, 49, 57, 61, 68, 70, 89, 131, 151, 153, 162, 173, 180, &c.)

B. LICHEN PLANUS.

This disease, lichen planus, which includes the lichen ruber of Hebra, is an exceedingly well marked form of cutaneous disease, and I have a good deal of special information to give on the subject; as by good fortune, since the last edition of this work, I have had no less than three cases of the veritable lichen ruber of Hebra under my care, if not four, and a goodly number of cases of lichen planus, so admirably described by Mr. Erasmus Wilson.

Lichen planus may occur in two forms—the limited, and the general. The former answers to the lichen planus of Wilson, the latter to the lichen ruber of Hebra. I prefer the former term because it directs special attention to a peculiar physical characteristic of the papulæ found in the disease, and shall use it as the best designation for the disease as a whole. I propose to consider the disease as it occurs in a localized form, with the papules discrete, or in a general form, in which the disease shows a special tendency to invade the whole body by the formation of large patches. The former I have noticed to be slowly developed, the latter rapidly or acutely so. The latter is rare in England, the other fairly common.

Now for the guidance of the reader I may say that the papules are formed by changes taking place not at the superficial part, as in lichen pilaris, but the deeper parts of the follicle—viz., the papilla, and the root sheath.

General Description of the Eruption.—The disease lichen planus, as generally seen, is characterized by the development of papules of very peculiar characters; as regards colour, shape, structure, aggregation, behaviour, seat, chronicity, and accompanying phenomena. As regards *colour:* They are "dull crimson red," suffused with a purplish tint: *shape:* they are always flattened, smooth, shining, and horny-looking at their apices, one to three lines in diameter, and have an angular base, whilst in their centre, which is sometimes depressed or umbilicated, is to be seen the opening of the hair follicle. There are no scales seated upon these papules except when they are packed closely together so as to form patches. *Structure:* These papules are formed not by the filling-up of the follicle, but evidently by the formation of new tissue around and about the follicle at its deepest part. If a hair be extracted, it may be possible to detect adherent to it the root sheath much hypertrophied. *Aggregation:* the discrete form is always present at the outset, but this always exhibits a tendency to become the aggregated, so as to form patches, but not by the peripheral enlargement of the existing papules, but the springing-up of new between the old ones. When patches are formed, the parts become more and more infiltrated after a while, whilst the individuality of the separate papules is lost, more or less, save at the extending edge of disease where characteristic papules are always to be seen. *Behaviour.*—The papules never assume the aspect of any other of the elementary forms of eruption—*i.e.*, they never become vesicles or pustules. They are in fact primary formations and preserve the characters of papules till they begin to subside and disappear. *Seat of Eruption.*—The most characteristic seats are the front of the forearms and wrists, the flank, the lower part of the belly, the hips, and over the vastus internus about the knee. *Chronicity.*—The disease is very chronic, it is often local, and always more or less symmetrical. *Concomitants.*—There is often a deep red hue in the seats of eruption, with burning and intense pruritus. I have usually noticed a flushing or bronzing of the face: occasionally brittleness of the nails: at times great debility, and in some cases marked digestive troubles. When the papules disappear they leave stains, and the patches diminish by absorption of the new tissue which forms the papulæ, and then in some cases in place of the elevations little pits remain. The material forming the papulæ has, as it were, stretched the natural integuments, and on that account perhaps the pitting is more obvious.

The more Localized Form.—Lichen planus, as *generally* seen, may consist of two or three collections of papules, tending to the formation of patches, in a single region of the body, or in two or three places at the same time—the thigh, the front of the forearm, and the flank for instance; or it may consist in scattered papules; or it may be general, as I shall presently notice. In one of my cases the woman has lost all signs of eruption, but her skin is stained something like that of a patient with Addison's disease, and she is gradually sinking from intense nervous debility; but this is unusual.

The Exaggerated, or more General Form.—The more general and severe form of the disease as described by Hebra under the term L. ruber, and as I have seen it in England, commences by an eruption of miliary papules, which are at first distinct one from the other, but soon coalesce so as to form patches by the development of new between old papules, the patches being covered by small, thin, not very adherent scales. When a large extent of surface is attacked, the integument, in an advanced stage of the disease, "is universally reddened, covered by numerous thin scales, and so infiltrated that when a fold of skin is taken up it is found to have more than twice its normal thickness." But on close examination the papules are detected at least at the edges of the patches. The movements of the part may become affected, and the hands be stiffened; flexion and extension of the fingers and toes be difficult; the skin of the palms of the hands and soles of the feet be hardened; and rhagades appear. The nails may become thickened, opaque, rough, and brittle, or thinned and platy; but I have noticed this in the discrete variety when there was very little eruption. The hair of the head and axillæ is unaffected. Hebra says, in the later stages troublesome itching occurs, but not so great as to induce scratching and resulting excoriations. My experience is that this prevails in almost all cases throughout. Marasmus and death may finally set in.

In the three well-marked cases of the kind which I have had (see *Brit. Med. Journ.*, April 13, 1871, *Clin. Soc. Trans.*, 1872) there was no distortion of the hand and fingers, and no marasmus, but the general appearances described by Hebra as existing in the skin were well marked.

In one case I observed a good deal of hyperæmia of the surface generally, and the actual papules were preceded by red hyperæmic puncta, seated at the hair follicles, this condition appearing to be the first and necessary stage to the actual production of solid papules. It may be as well to add, that the eruption in progress of cure, as far as I have seen, alters its features. The universal thickening breaks up into closely arranged patches—that is to say, limited areas covered by red distinct papules appear, the red papules after a while subsiding. When the disease has still further advanced towards cure the surface instead of being papular in aspect may present little pits in the sites of the former papules.

Now, as I have hinted before in speaking of the division of the disease into localized and general, the latter has seemed to me to differ from the former in developing more acutely over the general surface, and there is a case under my care, in hospital, at the time I write, in which the whole body was attacked within a week or two.

In both forms of the disease the general health is bad. Patients are very frequently dyspeptic, anæmic, or menorrhagic, and thoroughly debilitated. I have never seen them go from worse to worse. But great care is required to bring them back again into health. I have seen the disease lichen planus, at all ages from sixteen years upwards. The more severe form I have noticed only in women, who have been much depressed in various ways. The disease in all its forms is most rebellious to treatment.

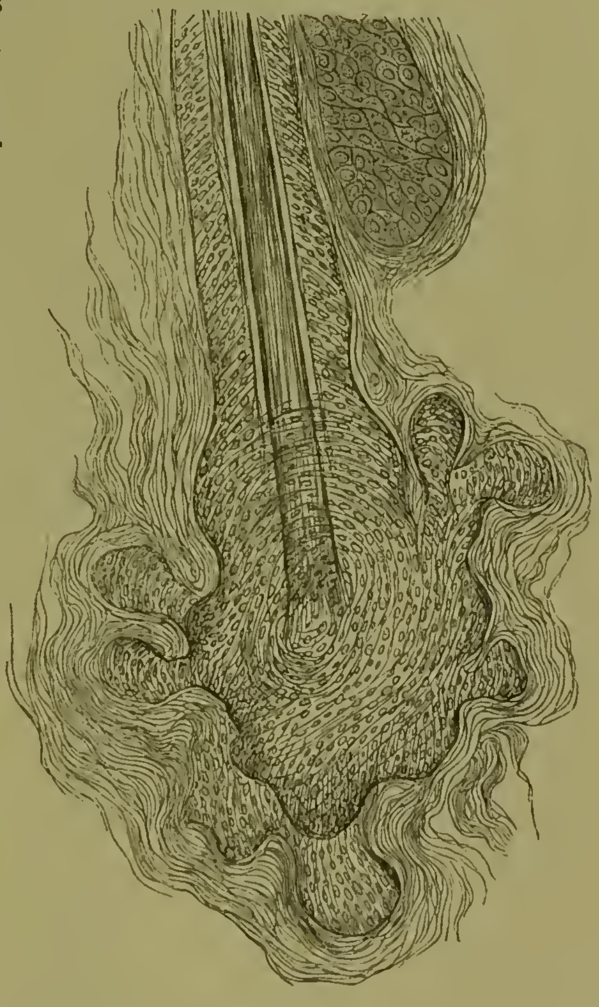
Summary.—To sum up then in regard to naked-eye appearances, I may observe that lichen planus is characterized by the presence of very peculiar papules, which papules tend to crowd together into patches.

The disease may consist in the development of a few papules in a solitary region, or in a mixture of distinct papules and separate patches. In some cases however nearly the whole surface may be involved and then the crowding together of papules into patches is so great that the whole integument of the affected part is reddened and thickened so that the papular aspect is lost, except at the edge of patches or outlying parts. The surface is then covered over by thin, fine, and slightly adherent scales. In Hebra's experience the latter phase is a serious matter involving marasmus and death.

Pathology.—The remarks I shall now make will, I hope, with the aid of the description just given of the external aspect and course of the disease, enable the reader to understand lichen planus without difficulty.

First of all as regards the actual changes in the skin. These differ as might be anticipated according as the disease is in its early or its later stages.

Fig. 10.



(After Neumann.)

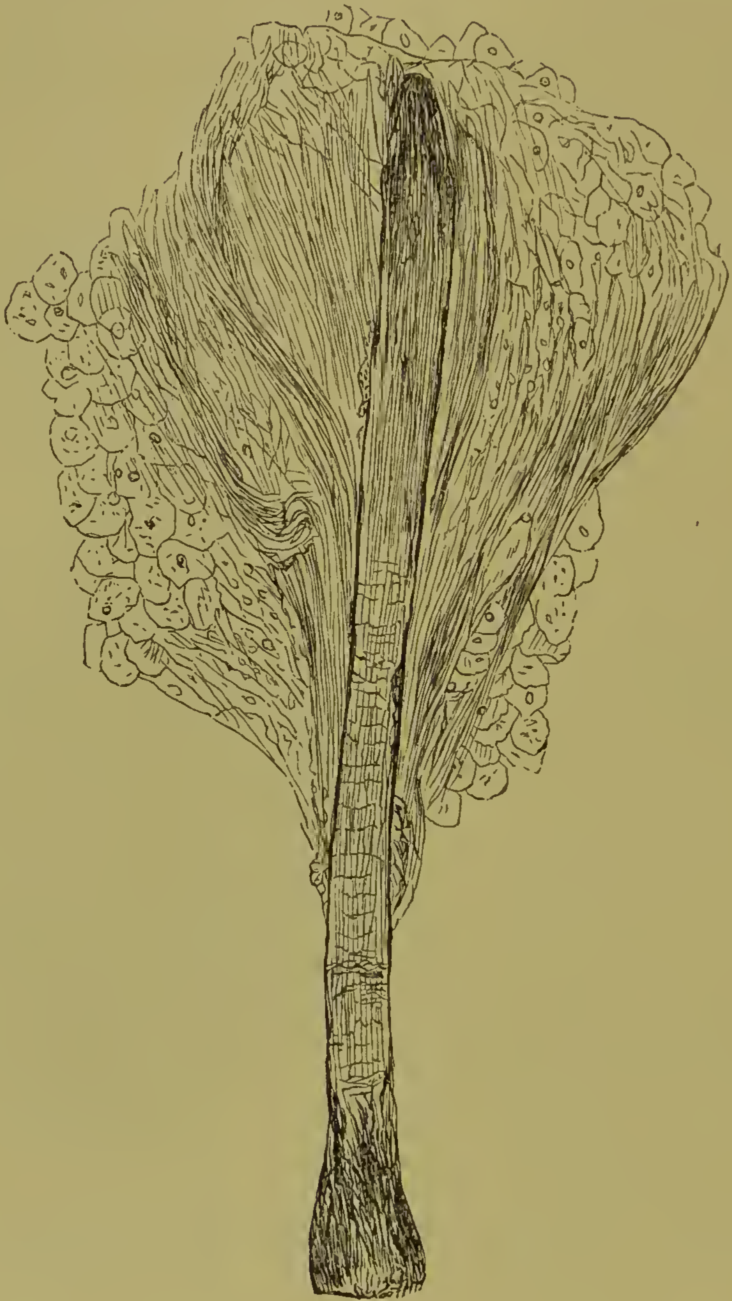
Knob-like projections about the root of the hair formed by cell-growths.

The first condition that seems to me to be present is hyperæmia of the papilla and the follicular wall about it, with hypertrophy of the root sheath at the lower part of the follicle. I have managed to get away with the hair a portion of the attached root sheath, from an isolated but well-marked papule, and found exactly those appearances which are given in the accompanying illustration of Neumann (fig. 10).

It will be seen that there are knob-like projections formed by outgrowths from the root sheath of the hair and these outgrowths are made up of cell-masses. In the more fully developed disease other changes may be observed, in the root sheath at its upper part, and also in the general area of the corium.

The upper portion of the root sheath of the hair becomes in some cases greatly elaborated and hypertrophied, producing an appearance represented in fig. 11, which I sketched from a specimen taken from one of my cases. Hebra has remarked that the root sheath of the hair is enlarged, being "pointed below, expanding towards the mouth of the sac, and looking as if it were made up of hollow cones, loosely included in one another, and having the hair in the middle." In fig. 11 the hair is seen to be imbedded in the enormously hypertrophied root sheath, represented by the fibrous mass expanding from below upward. The hair itself was just visible to the naked eye in the centre of one of the lichenous papules, and I managed to get it away with the attached root sheath entire, at least at the upper

Fig. 11.



part. I did not find any trace of hyperplasia about the root of the hair as represented in fig. 10 in this particular case.

I spoke a moment since of changes in the cutis. As the result of the hyperæmia in the disease, the epidermic layers, both horny and rete, are hypertrophied in long-standing cases. The papillæ are likewise enlarged and their connective tissue increased, their vessels are dilated, whilst a dilatation of capillaries and small vascular trunks is also seen in the corium. The vessels moreover are surrounded by cells, which are probably proliferated connective-tissue corpuscles. The sweat glands, according to Neumann, are healthy, but their ducts are funnel-shaped, having the large end above, and are filled with small, closely-packed cells. The sebaceous glands seem after a while to be pressed upon and to disappear. The muscular fibres attached to the hair follicle are much hypertrophied. The hair itself ends below in the “brush-like” expansion, surrounded by the knob-like outgrowths before referred to (fig. 10).

Taking into consideration the clinical history of the disease and the morbid changes actually discovered in it, it seems to me easy to give an explanation of the disease, and to determine the exact sequence of events. The disease commences primarily at the bottom of the hair follicle, with hyperæmia of the papilla, and the formation of new tissue by proliferation of the cell elements of the root sheath : the hypertrophic or inflammatory infiltration in the papillary layer being a secondary matter. The reader, if he will glance over the particulars of the cases I have elsewhere recorded, will not fail to observe that careful observation detected red puncta seated at the hair follicles as the early stage, and of course these were more noticeable where the disease developed rapidly; and these red puncta were seen to be followed by the formation of actual papules, and so on. But then if I am required to give a reason for the limitation of the disease to the deep portions of the hair follicles, I can only point to *the fact* that it is so limited.

The immediate cause of the hyperæmia and cell changes seems to me to be disturbance of the action of the sympathetic (? trophic) upon the vessels of the papilla. This is part of a general disturbance which accounts for the suffusion of the face, the menorrhagia, the pyrosis, the cramps in different muscles, peculiar restlessness, special dryness of the mucous membranes, irritability of the heart, disorders of the special senses, some or all of which I have noticed in my three cases of general lichen planus, and many of which have been present in instances of the more localized form of disease.

Diagnosis.—It is difficult to understand how the eruption of lichen planus can be confounded with any other disease, if attention be paid to the dull red, flat, shining character of the papules, leaving behind on their disappearance melasmic staining.

Treatment.—In lichen planus the practitioner has to deal with an idiopathic hyperæmia of the deeper parts of the hair follicles and hypertrophous growth of the root sheath, followed secondarily by hypertrophy of the papillary layer of the skin, and in association with hyperæmia and functional disturbance of important internal organs, and serious derangement of the general health. The remedies are both local and general.

As regards general remedies, there are four indications: the *first* is to improve the tone of the patient as regards his nervous system, by proper rest and quiet, by change of air and scene, and the avoidance of fatigue if necessary. The cure is not solely a matter of mere dosing the patient. The general tonics appropriate to the disease are quinine, cod-liver oil, the mineral acids, and perchloride of iron.

The *second* indication is to alleviate internal troubles—of stomach especially—and it is necessary to do this before beginning a tonic treatment. In one case I used assafœtida largely at the outset, because of the hysterical tendency of the patient, who suffered from severe heart excitement, menorrhagia that weakened, and nervous dyspepsia that much depressed and troubled her; and I did so with good effect. But I have noticed that in patients who are dyspeptic, the irritation of the skin is much aggravated by the ingestion of food, &c., and in these cases I have given alkalies with bitters largely and with good effect, subsequently using iron and other tonics.

The *third* indication is to feed up the patient whenever there is evidence that his or her living has been bad or defective; but in order to do this it is necessary that such conditions as dyspepsia, pyrosis, or the like, be first of all removed.

The *fourth* indication is to attempt to diminish the hyperæmia by astringents given internally—ex., the perchloride of iron. But this cannot be undertaken till special influences that intensify the irritation of the skin—ex., dyspepsia, &c., are properly negatived. I like the perchloride of iron in full doses in cases of lichen planus. With regard to arsenic I can only say that it has always made my cases worse. In some instances of lichen planus in the discrete form, where the papules have been particularly solid and there has been less hyperæmia than usual and the patient was fairly strong, I have given alterative doses of mercurials with very great benefit indeed, in conjunction with cod-liver oil.

But having said so much as to the general indications, I may be more precise on one special point. If the hyperæmic feature of the disease be specially well marked, and the disease be general, I never hesitate to give diuretics freely, because I believe I relieve the skin greatly; and so if there be very little hyperæmia, comparatively speaking, and more "deposit," so to speak, I would use mercurials or alkalies as the case may be, to quicken the absorption of the new tissue composing the papules.

Lastly, internal medicines are required to allay itching. I have tried a good many. Aconite, chloral hydrate, carbolic acid, and opiates are the best; but these do not answer particularly well, and I think local measures are the best for the purpose.

Local Measures are employed to allay irritation, to diminish hyperæmia, and to stimulate the absorbents to get rid of the newly-formed tissue. I do not know that I can say that any one remedy will allay the itching in all cases. If the disease be acute and pretty general, alkaline baths (bicarbonate of soda with bran), followed by a bismuth lotion—ex., R. bismuthi trisnitratis ʒij, P. zinc oxyd. ʒij, tr. digitalis ℥ss, aquæ ad ℥vj, may relieve. A lotion made of prepared calamine powder ℥ss, prussic acid 20 to 30 drops, borax ℥j, and rose-water ℥vj may be of use. In some cases dusting the surface over with oxide of zinc powder will benefit. But if the case be chronic, and more or less indolent, vapour baths, followed by the application of oil or the unguentum plumbi (Formula 121) spread on strips of linen will often benefit the patient. Iodoform ointment has relieved some patients greatly, but it is very unpleasant to use. The oil of cade in the proportion of 1 part to 4 of unguent gives relief in chronic cases. But my plan is to be very tenacious of using any stimulant when there is hyperæmia for this seems to be readily increased by irritants: to trust to a general improvement of the health for the cure: to allay by sedatives the distress of the immediate irritation: to give alterative doses of mercurials if there be much thickening and the patient is not depressed or debilitated, and finally to employ tar or vapour and sulphuret of potassium baths. I have seen cases relieved solely by alkaline baths and the application of milk. But all these cases of lichen planus will sorely try the patience of doctor and patient, and it is as well to announce to the patient in the first instance the probability that this will be the case.

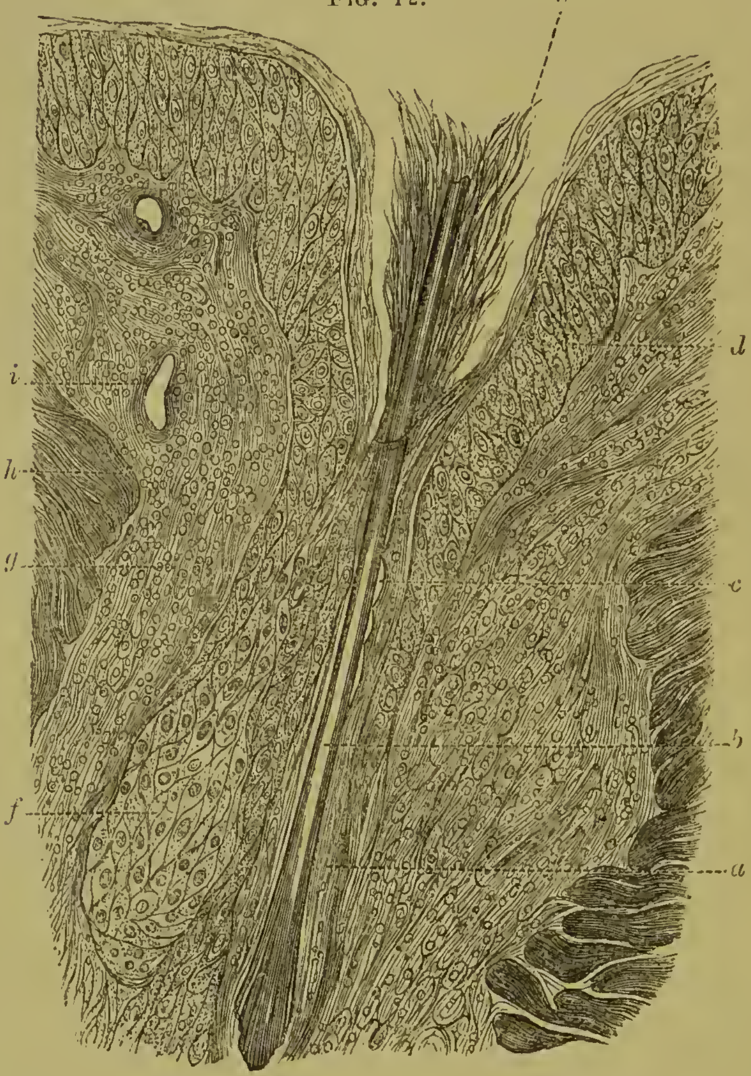
C. LICHEN SCROFULOSORUM.

This disease occurs essentially in strumous subjects. It shows itself, according to Hebra, who first described it, in the form of little elevations about the size of millet-seeds, either pale, or yellowish, or a brownish-red colour. These papules never become vesicles; they are grouped together, sometimes in circles, sometimes in segments of circles. The papules are seated at the hair follicles, and are by-and-by covered by thin scales; the patches itch slightly, but not so much as to be scratched, and hence they are not excoriated.

The patches remain in one condition a long time, and undergo no changes but exfoliation and involution. The disease is limited to the trunk, the belly, the breast, and back, being rare on the extremities. Its course is very slow. Generally speaking many groups of papules develop at the same time. They soon reach the height of development, and then remain awhile in *statu quo*. In consequence of the absence of local symptoms, the disease exists unnoticed for some time. When at its acme, other symptoms are observed: between the groups, and at the same time, on parts free from lichen—that is, on the extremities and face—more or less numerous isolated bluish-red elevations are developed; these are about the size of lentils, and look very much like common acne; some of the papules are said to contain pus; then by-

and-by they wither and disappear, leaving dark pigmented orbiform lentil-sized marks in some places, whilst in others fresh formations take place. The skin between the diseased patches is the seat of desquamation, the scales being pale and shining, whilst the whole skin may assume a cachectic appearance. In 90 per cent. the disease is observed in markedly scrofulous subjects, and particularly children, together with swelling of the submaxillary, cervical, and axillary glands, with caries and necrosis, or tabes mesenterica. In one case recorded by Neumann there was lung disease. Hebra has seen many cases, and all recovered. The disease is not phthisical pityriasis. Each knot or papular elevation is seated at the orifice of a hair follicle, and is made up of

FIG. 12.



Lichen (Figure after M. Kohn. Sitzungsber. d. kais. Akad., 1868). *a.* Hair follicle. *b.* Hair. *c.* Root sheath of hair traversed by cells. *d.* Rete mucosum thickened, cells longitudinally displaced; exudation cells between them. *e.* Epidermic mass at aperture of follicle. *f.* Sebaceous gland. *g.* Cells around sebaceous gland and hair-follicle. *h.* Adjacent normal cellular tissue. *i.* Blood-vessel.

epidermic scales and fatty matter, in the form of fatty nuclei within the cells. The disease is seen almost exclusively in males, between the ages of fifteen and twenty-five. It may occur in a child under seven years. It is an infinitely rare occurrence in this country.

Pathology.—Some interesting studies of the morbid anatomy of this disease have been made by Kohn, of Vienna, who gives the accompanying representation (fig. 12) of what he found in it. He says that the essence of the disease consists in the presence of exudation cells in and around the hair follicles and the related sebaceous glands, and the papillæ about the aperture of the follicles. These cells make their appearance in the first instance outside the vessels at the lower part or base of the hair follicle, and the fundus of the sebaceous glands; but subsequently they are to be found within the sebaceous gland and the hair follicle itself, and to so great an extent as to separate the hair from its sheath, and to form a collection which takes the form of a plug in the orifice of the follicle—"the knots" before referred to. According to Kohn the papule is not due solely to distension of the follicle, but to the presence of cells about the follicle. How far the disease is primarily a choking-up of the follicles by desquamated epidermis, followed by acne, the occurrence of which is favoured by the strumous diathesis of the patient, is an interesting question. The disease gets well under treatment, with atrophy of the hair and follicular walls, and a certain amount of cicatrization.

The treatment of the disease is simple and effectual. It consists in the liberal exhibition of cod liver oil, and the inunction of oil externally.

STROPHULUS.

This disease, popularly known as the red gum, tooth-rash, white gum, or red gown, a "papular" rash observed in children, is looked upon usually as the lichen of infants. But the fact is that under the term a number of dissimilar things have been mixed up together.

The older authors described the disease as one of acutish aspect, characterized by the appearance, on the most exposed parts, the face especially, but also the neck, arms, and limbs, of successive crops of little red, irregularly dispersed or slightly aggregated, acuminated papules, intermingled with more or less erythema. The papules vary in size from pins' heads to small millet seeds; are attended with itching, sometimes slight moisture, and desquamation. Willan made several varieties, as follows:—S. intertinctus, confertus, albidus, candidus, volaticus; and in addition, Hardy and Bazin have described a mixed form under the name of S. pruriginosus.

In *S. intertinctus* the papules were described as vivid red, and seen about cheeks, forearm, and back of hands; they are especially characterized by the intermixture of red blushes (erythema), and are intertinctured, in fact. It is said to occur in young infants, under three months generally, and lasts from two to four weeks. When the papules are numerous and closely packed—confluent—the name *S. confertus* is used. There is less erythema here; the papules are paler, the disease is of longer duration than the last, and a recurrence is likely. This variety occurs about the period of dentition, and in a chronic state is often limited to a few patches, which run through a slow course, and leave the skin harsh and dry. The nature of these papulæ I shall explain in a moment.

S. volaticus is a term applied to the disease when it consists of small ephemeral patches, made up of a dozen or so of papules, the skin being somewhat hot and itchy. This variety is observed about the arms and cheeks. Patches spring up here and there for two or three weeks. It is in reality an urticaria (lichen urticatus).

S. albidus is the name given to another variety, but it is a misnomer. The name is applied to small papular elevations, perfectly white, which make their appearance about the face and neck, and are distensions of the little sebaceous glands of the skin. (See Diseases of Sebaceous Glands.)

In *S. candidus* the papules are large and whitish; they are seen intermingled with those of S. confertus; appear about the shoulders, flanks, and arms of children about a year old, and disappear in seven or eight days. It is only S. volaticus.

Strophulus pruriginosus is the name given by Hardy to a lichen in which the papules are pruriginous; it is an obstinate form of disease, and a not very rare one. It occurs in young children from a twelvemonth or so to eight or nine years of age. Papules appear pretty generally over the body; they are harsh, dry, discrete, not confluent; some are surrounded by a red blush. These papules itch considerably, are scratched, and then the apices become discoloured from the drying of a little exuded blood, as in prurigo, but it is often only a very minute dark speck. After a while the papules are covered by scaliness, and the skin looks dirty and discoloured. Ecthymatous pustules may result from the continued scratching. The chief seats of the disease are the back and front of the chest, the arms, and the face. The disease is mostly chronic. It follows as a consequence of uncleanliness, bad living, the want of fresh air and proper ventilation in dwellings, and is frequently seen in hot weather, and in fact it is a pruriginous condition consecutive to urticaria (lichen urticatus) in mal-hygiened or mal-fed or strumous children, and nothing more.

Pathology and Cause of Strophulus.—It is often said that strophulus and lichen are one and the same thing in essence, strophulus occurring in the delicate and vascular skin of infants. After adolescence the nutrition of the body has so far changed, that the skin has become firmer and less elastic, so to speak, and strophulus does not occur. It is also said in books that in children simple disorders of the stomach lead to blood changes, and that these readily influence the skin, producing strophulus, as do acidity, bad milk, teething. I cannot subscribe to this. The strophulus of authors is an incongruous mixture of diseases. I believe that whereas the anatomical seat of lichen is the papillary layer of the derma, in what is often termed strophulus it is the sweat follicles. The summer of 1868 supplied me with a good deal of material, and in cases which had all the appearance in children, of strophulus, the papillary elevations were clearly seen with a powerful glass to be seated at the sweat follicles, and on viewing them in a slanting direction the central dark apertures of the pores were distinctly observable. When one remembers that in cases of strophulus the children attacked are those who are kept in heated rooms, or are muffled up from the fresh air—that the disease occurs during change of season, and on exposed parts—it will be readily conceived that the view I take of it may be the correct one. I think, therefore, that the simple forms of strophulus should really be ranked as hyperæmias under the head of disorders of the sweat glands.

Now that children are not kept so warm, and allowed to breathe fairly, we do not see so much of strophulus. S. albidus I entirely discard; it is a sebaceous disease; and S. volaticus I expunge from the list of diseases. In contrasting the papule of a lichen and strophulus, there is every difference found: that of lichen is not removable by the finger, and it is solid feeling (exudation) and pale; that of strophulus is vivid red (vascular), diminishable by pressure, and softish to the feel.

Diagnosis.—In strophulus, the so-called S. intertinctus and confertus, the papules have an exanthematous aspect which is very significant. As a rule, they are not so dry and harsh as those of lichen. The disease occurs peculiarly in infants; it is not accompanied by a harsh state of skin, by crackings, or the formation of crusts; it is more intermitting in its aspect than lichen. S. pruriginosus I relegate to lichen urticatus (urticaria).

Treatment.—In simple strophulus cleanliness must be observed; the child must not be too much wrapped up, and should have proper food; the use of soap must be avoided; the state of health of the nurse should be seen to; local irritation—*e.g.*, that of teething, hot clothing (flannel), must be remedied; any aphthous state of mouth must be treated; acidity should be corrected, and gentle aperients given; whilst tepid sponging, spirit or alkaline lotions, may be used locally. A very useful lotion is, carbonate of soda 20 grains, rose-water 6 ounces, with 2 drachms of glycerine. Almond emulsion and lime-water may be also used.

PRURIGO.

This disease is essentially a chronic inflammation of the skin, which expresses itself in the first place by the development of peculiar papulæ, and subsequently general thickening of the skin, and moreover by intense pruritus at every stage of its course. It is a very uncommon disease in England, emphatically so in its severest form, which is seen pretty often in Vienna. I have been on the look-out for a case of the most marked form of disease, such as Hebra describes, for years past, and have only met with one case in England.

In describing prurigo, it is most necessary to state *what prurigo is not,* for the reason that the word prurigo has been applied to several entirely distinct diseases in the loosest manner possible, and there is an abiding desire to rank under it diseases the most diverse *en masse.* I will therefore give in detail the characters of true prurigo, and then enter into particulars relative to the various diseases that have been and are likely to be confounded with it. The disease, I may say here, is not phthiriasis (prurigo senilis of older authors).

Prurigo occurs in two forms—a slighter and a severer form, to which the terms *mitis* and ferox, or agria, may be respectively applied.

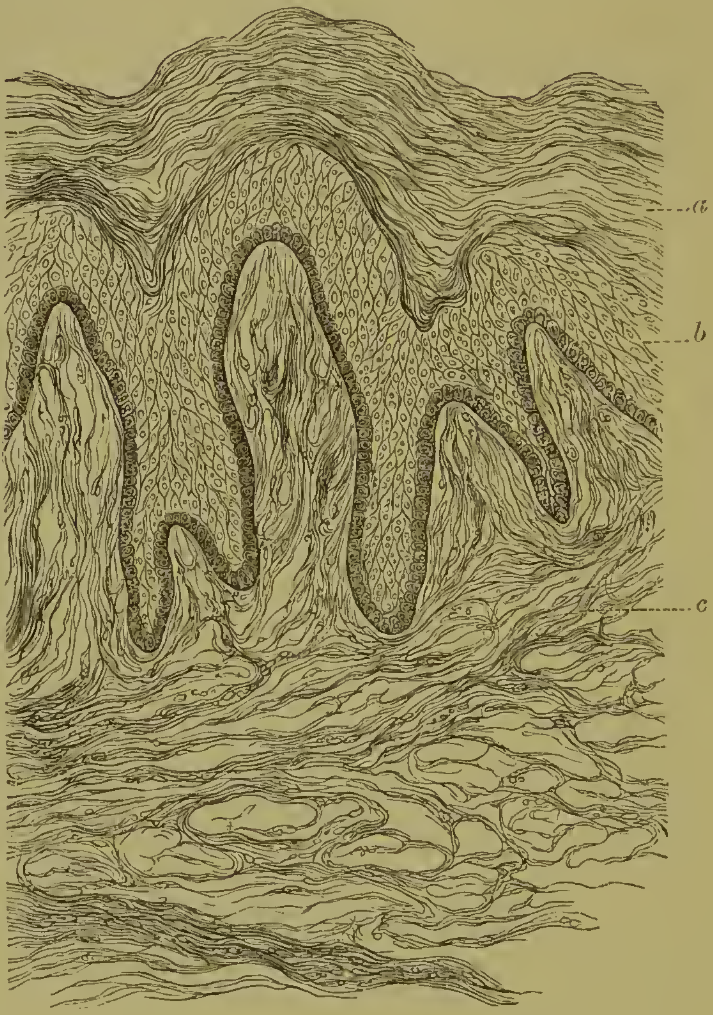
Prurigo mitis is characterized by the development of flesh-coloured papules, *in an isolated and scattered form,* of the size of a couple of pins' heads put together, or a little larger. These papular formations are attended by intense pruritus, which induces the patient to scratch and to excoriate the papules, which then become covered at their apices by dried blood-scales. Sometimes the papules are very deeply excoriated. There are also papules to be felt rather than seen on the skin, and if the finger be passed over the affected part they feel shotty and hard. There are in addition to the actual excoriated papules and sub-epidermic papules, independent excoriations, and sometimes wheals produced by the scratchings. The eruption therefore consists of certain papules, altered by scratching, and accompanied by intense itching, as *primary* and essential phenomena. The pruritus is often of a burning or creeping, or intensely itchy character; it is aggravated by alterations of temperature, by the access of air to the skin, by mental emotion, by the ingestion of food, especially spicy things and hot liquids. It keeps the patient awake at night in some cases for hours together. The seat of the eruption is particularly, the exterior surface of the legs and arms, the buttocks, and the shoulders about the scapulæ. In some cases about the legs, the papules crowd together, forming a patch, which is increased in size and thickness by general inflammatory infiltration of the part, which then feels hard, rough, and indurated like thick leather. I have seen this disease in most cases in cooks or others who have been exposed to the fire a great deal, and the innervation of whose skin has clearly been thereby much perverted. The disease has occurred in these cases in men and women of from twenty to fifty years of age. I have seen something like the disease in a more localized form result after chronic eczema in young children.

Prurigo ferox, or agria (Hebra's prurigo). This severer form of the disease, which occurs at an early age, is said to be incurable. It affects the general surface of the skin, and is characterized by general infiltration into the skin, with certain secondary consequences, such as abscess. It is supposed not to occur in England, but I have recently, as before stated, seen an undoubted case. This form of disease has been specially described by Hebra, and it is common in Vienna. The reader will readily understand that if the simpler form of disease were to become very exaggerated the papules would crowd together, and this together with inflammatory infiltration of the skin generally, would give rise to a form of disease in which the whole skin is rough, harsh, and thickened, and in which, if the patient be cachectic, eczema, pus-formation, and the like, with glandular complication, may result. Such is Hebra's prurigo indeed. But Hebra shall speak for himself. He says :—

"Its earliest sign appears in the form of isolated sub-epidermic papules recognisable rather by touch than by sight, raised but little above the level of the skin, and not differing from the latter in colour, appearing in various parts of the body. They are accompanied by great irritation, and being scratched become red and raised, and at length covered over by a black scale of dried blood, and presenting then the features of an ordinary pruriginous rash. When this state has lasted for some time, a series of fresh phenomena appear. There is an increased deposit of pigment observed in the skin in the seat of the excoriations; the natural furrows become more distinct and separated, especially about the wrists, the back of the hands and fingers; the hairs thin out; the skin gets more dense and hard, and feels much thicker. But this is not all; occasionally an exaggeration of these phenomena are observed (P. ferox), the itching increases, the papules enlarge, the excoriations and blood-crusts are more developed and abundant. The epidermic peels off as a powdery substance, and suppuration of each papule may occur, or a condition of ezcema rubrum may be produced in a part or over the whole surface."

Hebra adds: "Going over the different regions of the body in a patient affected with prurigo, we shall find the scalp free, but the hair dry and covered over by a scaly dust; the face clear or showing a few papules, save in rare cases, when it is eczematous; the throat and back of the neck free; the whole thorax, however, in front and behind covered with papules, some only to be recognised by touch, others being 'pruriginous' (as we English understand). The abdomen is likewise affected, so also are the buttocks and sacral region; but the limbs show the disease most certainly, especially on the exterior surface. The skin is discoloured and thickened, and furrowed also, especially over the exterior surfaces. The leg below the knee presents the most characteristic appearance and feel, being as rough and harsh as a file. The armpits, hams, flexor side of wrists and palms, groins, and soles of feet are unaffected. If there be much eczema, the glands are enlarged (prurigo buboes). The disease begins in early life, varies in severity, lasts a lifetime, and is incurable. It occurs in the badly nourished, and is aggravated by winter."

Fig. 13.



Section of pruriginous skin from leg. *a.* Epidermis. *b.* Pigmented rete Malpighii. *c.* Thickened corium with enlarged papillæ.

It will be observed then that *prurigo ferox* commences in the same way and form as *prurigo mitis*, and becomes subsequently exaggerated. I can now confirm Hebra's description from personal experience of the disease as seen in England. I will only add that I have seen a condition suspiciously like partial prurigo result from chronic eczema in bad-hygiened and badly-fed subjects.

Morbid Anatomy.—The changes that occur in the skin in prurigo have been pretty well made out. Neumann found a limited cell-growth in the papillary layer of the skin, with much amorphous matter. The rete Malpighii and horny layer of the epidermis being both hypertrophied, with great increase of the stellate cells. Derby, of Boston,* describes similar changes as occurring in well-developed cases, but declares that a hair runs through the centre of each prurigo papule, there being a great increase of connective-tissue cells at the point of insertion of the arrectores pili. This Neumann denies, stating that the cell collections which are seated above or below these muscles are the same as those seen in lichen planus. In marked cases the cutis is generally thickened by hypertrophous growth, and so is the outer root sheath. Hebra thinks the papules are not formed originally at the papillary layer, as stated by Neumann, but by effusion into the deepest strata of the epidermis. Very recently some further investigations have been made by Dr. A. Gay, of Kasan,† with great care and minuteness.

Dr. Gay states as the result of his examination that the pruriginous process begins, as stated by Neumann, in the papillæ of the corium, the texture of which becomes considerably richer in cells, whilst its vessels are enlarged.

The rete Malpighii is involved, its cells proliferating, especially in the deeper layers, whilst numerous small cells are met with which probably originate by a segmentation of others. The rete Malpighii thus becomes hypertrophied. But the corium also thickens. Cell proliferation is likewise noticed in the fundus of the hair follicle, in the outer root sheath, especially in certain places in it, and also in the hair papilla and the hair bulb.

In chronic prurigo the hair is frequently found with its inner sheath torn off at the upper part of the outer sheath, except in those places where the latter has formed protrusions.

"The sweat glands participate in the process in a very marked degree; the cells of the excretory duct and glandular canal are cast off from the walls; at the same time numerous small, round, and branching cells are observed in their walls. By the advancing morbid process all the parts of the corium are changed like those in the papillary texture at the beginning of the process; the vessels are enlarged, the texture filled with numerous cell formations; these are either small, round cells, easily tinged in carmine, or large, irregular, migratory cells filled with one or more constricted nuclei, nets of branching cells, and in the chronic form whole tracts of spindle-cells; in the latter case the blood-vessels present in their coats a considerable cell increase."

Diagnosis.—In thus endeavouring to give for the first time a distinct and clear account of prurigo as an independent disease, it is very necessary to make a few remarks upon the varied interpretations put upon the term "prurigo" by different writers. It is only recently that dermatologists have come to the conclusion that there is an itchy and papular disease of the skin of idiopathic origin, to which the term prurigo should be applied.

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* Sitzungsberichte d. Kais. Akad., 1869.

† See a full translation by Dr. Kuentzler, of the article of Dr. Gay (originally published in the Archiv. für Derm. und Syph.) in the American Journal of Dermatology and Syphilis for July, 1870, p. 261.

Under this term have been mixed up because they have not been properly diagnosticated :—

1. Phthiriasis, or the disease due to pediculi.
2. Pruritus, with the results of scratching, or so-called "pruriginous" eruptions occurring in connexion with local irritation, and independently of senile decay.
3. Pruritus and changes in connexion with senile decay of the skin (pruritus senilis).
4. True prurigo.

The first three will be or have been described; the first under parasitic diseases, the second under the head of follicular congestion, and the third under neuroses of the skin.

The term "pruriginous," which has been used as I have elsewhere stated to describe any papular rash the result of scratching, and which is characterized by excoriated papules with dark apices due to dried blood, is an unfortunate one, because it implies some connexion with prurigo; indeed, I prefer the term "pruritic rash," or pruritic "eruption." (See Follicular Hyperæmia, p. 127.)

Willan made three varieties of prurigo—mitis, formicans, and senilis; and according to my opinion his prurigo must be broken up and its varieties distributed as follows:—The prurigo mitis and formicans constitute the slightest forms of true prurigo—prurigo mitis. His prurigo senilis is a combination of phthiriasis and the pruritus with "pruritic eruption" accompanying senile decay of the skin.

The upshot of the whole matter then is simply this—that prurigo, phthirasis, and pruritus senilis are quite distinct and separate diseases. Prurigo is known by the presence of solid fleshy papules of primary origin, accompanied by intense itching, and in severer cases by the general infiltration, the prurigo buboes, and the raspy, rough, knotty feel of the skin of the limbs.

Causation.—Nothing is really known as to the causes of prurigo. It may be that nerve paresis is at the root of the disease, but it is mere guesswork at present to say so.

Treatment.—The success of treatment in the severer form of prurigo depends upon the fact of the attacked being a child; for by judicious treatment in the child the disease can be cured. The slighter form (P. mitis) one can always cure. In treating the disease, the objects to be attained are—the improvement of the patient's general health; the removal of the patient from all influences that stimulate the skin, such as his or her remaining in an occupation which entails exposure to high or great variations of temperature; the quiescence of the pruritus; and the removal of the infiltration into the skin. As regards improving the general health, this is very necessary in certain cases. In two or three instances patients who have come under my care with prurigo mitis have been greatly troubled and worried, they have been very dyspeptic, and have taken by far too freely of stimulants in place of solid food. If therefore the system be loaded with retained excreta, if there be dyspepsia, appropriate medicines to remedy these conditions must be adopted in accordance with general rule. In the severer cases quinine, steel, and cod-liver oil are clearly indicated. The pruritus may be relieved by the employment of baths, emollient applications, and the use of anodynes and sedatives, both external and internal. Anything that allays the pruritus tends to favour the cure of the disease. But there are other and special remedies which speedily act in this direction, to be noticed directly. I have the greatest faith in strong alkaline baths, following up by the application of any bland oil or of unguent kept in contact with the skin all night, and the use, if the patient must go about his business, in the daytime, of an oxide of zinc or borax and prussic acid lotion, &c. (Nos. 53, 47, 51, 54).

I think it is very important that the air should be excluded from the excoriated and scratched skin. The baths should have a temperature of 92° to 94° F., and contain 2 or 3 lbs. of clarified size, with 2 to 4 ounces of bicarbonate of soda in each. The patient should remain in the bath twenty minutes, and be well oiled over, or wrapped up in oil or unguent for the night on coming out of the bath. The best unguent is perhaps the old "Kirkland neutral cerate," freshly made. If the baths do not allay irritation, some more decided sedative may be applied externally. (See Formulæ Nos. 37, 38, 40, 44, 46, 49, 57, 59, 64, 76, 88, 108, 130, 131.) The patient should take chloral at night. If the disease assumes an indolent but yet not a severe form, I have recourse, in addition, to the use of tar or sulphuret of potassium baths, for the purpose of stimulating the skin, but I object to push their use if they irritate in the least. At Vienna the soap treatment is recommended, but I cannot get any good out of it in England. For the treatment of very obstinate cases I should be inclined to try alterative doses of bicyanide of mercury in 1-24th grain doses twice a day, with cod-liver oil and alkaline and sulphuret of potash baths alternately, followed up by oil inunction and the occasional use of tar compounds, the best being the pyroligneous oil of juniper, ʒij to ℥ss or ℥j of lard. But as I have only seen one of the severest cases, and that recently, and it is still under care, I cannot offer much advice as regards the treatment of such cases.

CHAPTER X.

CATARRHAL INFLAMMATION, OR ECZEMA.

I consider it very necessary to give a pretty full account of eczema, because I venture to hold opinions which coincide with those of Willan, and are therefore opposed pathologically to the views of many modern authorities and writers upon the subject. I will first state what eczema appears to me to be, and then append and examine the views of others. Now in estimating the nature of eczema, it is imperatively necessary to deal with the disease in all its parts, as one whole. There is a tendency amongst the best observers to base their conclusions as to eczema and its relationships upon partial views of the disease. For instance, some seem to concentrate all attention upon the pathological lesions, some upon the physical characters of these lesions, &c. But a correct estimate of the disease can alone be obtained by taking these lesions in conjunction with the general history and course of the disease, the subjects in whom it occurs, and other concomitant considerations.

In the preceding chapter I have dealt with diseases characterized as regards local changes by hyperæmia, and consequent serous effusion into the rete. In eczema there are present not only hyperæmia and serous effusion, but distinct changes in the tissues of the deeper parts—the papillary layer and the corium—giving rise to new products, and especially pus. These changes are primary and essential phenomena; in fact, true inflammation, in the fullest sense of the word, is present.

The leading idea I would have my readers keep in view in dealing with eczema, is, that it is the analogue of catarrhal inflammation of the mucous membrane; in fact, the disease is catarrhal inflammation of the skin. This view of the character of eczema I have long put forward, and on referring to Rindfleisch* I was very glad to find eczema regarded as a catarrh of the skin.

But I will proceed to give a general description of eczema, and will deal with the views of authorities subsequently and separately.

Now, typical eczema is an acute inflammatory disease, characterized especially by an eruption, in connexion with more or less superficial redness, of small closely-packed vesicles, which quickly run together, burst, and are replaced by a slightly excoriated surface that pours out a serous fluid, which dries into crusts of a light yellow colour, of moderate thickness, and composed of granulation corpuscles, pus corpuscles, epithelial cells in an ill-developed state, and granular matter of an inflammatory and fatty nature. The discharge has the very peculiar property of stiffening linen. The vesicles appear in successive crops, and may prolong the disease for an indefinite time. Their formation is attended with itching and local heat. The skin is irritable, and occasionally excoriations or crackings of the part occur. The true skin itself is somewhat infiltrated, and sometimes the parts around the patch inflame, in some cases from the irritating nature of the discharge, whilst the disease is very apt to spread. The patches form on various parts of the body, are of variable size, and they are mostly symmetrically disposed. The discharge of an eczema may, however, be not serous but mainly purulent, and then large, thick, yellow crusts form. As the disease progresses towards cure, the discharge ceases, and a reddened scaly surface remains. If the disease is extensive and general there may be sharp pyrexia. Generally speaking, the attacked are of lymphatic aspect, and they often suffer from headache, loss of appetite, thirst, foul tongue, confined bowels, and the like. The mucous surfaces may become the seat of inflammation, either by the spread of disease from the skin or as a consequence apparently of the general condition. The disease is the most common of all skin diseases; it lasts a varying time, in consequence of successive local developments, and the tendency it has to spread. In the chronic state it often oscillates between cure and recurrence; the skin gets harsh, dry, red, and thickened from infiltration with new inflammatory products. After its disappearance, the disease usually leaves no traces of its former presence; but if eczema last a long time induration, fissures, œdema, papillary hypertrophy, ulceration, &c., may ensue; but these are quite accidental and secondary.

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* Text-book of Pathological Anatomy.

Now this typical form of eczema is not often seen by the practitioner in the early stage at which the vesicles are visible; but for all that it does exist. The varieties of eczema are three—Eczema simplex, localized and without appreciable general symptoms; E. rubrum, more or less general and inflammatory in its attack, as regards not only its local inflammatory phenomena and implication of the deeper tissues but the disorder of the system generally; and lastly, E. impetiginodes, in which the pus formation is not accounted for by the degree of inflammatory action, but is clearly dependent upon the existence of a pyogenic habit of body. Each of these varieties has, more or less perfectly marked, its stages of erythema, papulation, vesiculation, pustulation, and squamation; these mere *stages* cannot be regarded, however, as constituting clinical *varieties* of eczema. These varieties all come under the definition of eczema *as a catarrhal inflammation* *of the skin, which is mainly characterized by a peculiar discharge, stiffening linen, and drying into thin yellow crusts, and having its stages of erythema, papulation, vesiculation, discharge, pus formation, and squamation, more or less marked under different circumstances; and followed in some cases by the secondary results of inflammation, such as hypertrophy, œdema, and the like.*

E. simplex (called by Willan when slight E. solare, because it is often brought into existence as a consequence of the action of the sun's rays), is the typical form. It is generally local, but may be more or less general. It is excited by irritants of all kinds—*e.g.*, heat, cold, soap. If it occur in summer, the patient complains of fever, "a heated state of blood," headache, and the like; presently, on the exposed parts, especially the face, arms, neck, or the back of the hands, little clustering vesicles about the size of pins' heads appear, in conjunction with slight erythema, heat, and itching. The contents of the vesicles presently get milky, the vesicles burst, and slight yellowish crusts are formed. The duration of the disease varies very considerably. It is often short, but may be prolonged sometimes by the continued springing up of fresh crops of vesicles.

E. rubrum is the inflammatory form. The general symptoms are often severe; headache, fever, thirst, and foulness of tongue, being present to a marked degree; locally the part is "hot, tumefied, red, and shining," and upon this vesicles (which may require the use of a lens to detect satisfactorily) form, and soon become confluent. These vesicles very speedily burst, give exit to their contents, which desiccate, and give rise to yellow or brownish scabs; the secretion is ichorous in character, and causes considerable irritation to the surface around with which it may come in contact. The whole patch becomes excoriated, the burning pain is often very severe, and the disease spreads. This variety of eczema is generally observed about the flexures of the body, in the thigh, the groin, the elbow, the axillæ, and about the wrists; sometimes it is partial, but it may spread widely over the general area of the body. E. rubrum varies in degree; when it is very severe, the amount of discharge is large, the crusts are thick, the surface is much inflamed, and excoriated to a high degree. The transition from the simple to the inflamed variety of eczema is easy. E. rubrum is apt to become chronic in old people in whom it occurs about the legs, and is oftentimes the starting-point of ulcers.

Eczema Impetiginodes.—This is eczema occurring in lymphatic or debilitated subjects, especially young children, and since there is more or less of a pyogenic habit present, the corpuscular element in the secretion is much in excess, the amount of pus bearing no relation to the intensity of the inflammation. The general symptoms are in many instances much the same as those of eczema rubrum. There are, locally, a good deal of inflammatory heat and redness; the vesicles which appear contain a serosity, which is speedily mixed with purulent secretion. The discharge and subsequent drying of this tenacious fluid forms irregular greenish-yellow thick scabs and crusts, beneath which is a red ichorous surface. This form of eczema is very common, and is not as a rule general but local, confined oftentimes to a limited surface. This variety occurs especially in the head, and in infants. In infants the sebaceous glands often become irritable, and pour out a large quantity of fatty matter, and the disease is thereby increased in severity. The description of eczema infantile to be given directly will apply to the severest forms of eczema impetiginodes.

Impetigo.—In some cases of E. impetiginodes, or *E. pustulosum*, the pus formation is very rapid and the vesicular stage is not readily, if at all, observed. It is this form of disease to which the term impetigo was given. The older writers described it as characterized by the presence of psydracious pustules, or elevations of the cuticle by small collections of pus which run together; the increased production of pus, sometimes at different points, augmenting the area of the purulent patch often to a large size. The pus is soon discharged by rupture of the cuticular wall and then dries into thickish yellow crusts, accompanied by more or less oozing. The disease, in fact, is an infiltration of pus beneath and in the deep layers of the cuticle. Now when the patches are small and scattered, the disease is called *impetigo sparsa* (scattered); when it occurs in a large irregular patch, *I. figurata.* When the discharge is free, and there is a heaped-up and thick crusting from the drying and collection of the secretion, it is termed *I. scabida*, and occasionally the deep tissues are inflamed, and then we have *I. erysipelatodes.* Impetigo figurata may discharge a tenacious fluid, which, at first is very much like "concrete honey" (hence the name, *Melitagra*); but the crusts presently become dry, yellow, and discoloured. This phase of pustular eczema is generally observed on the face. When the discharge is free, as in infants, the scabs may be "stalactitic;" hence also the terms crusta lactea, porrigo larvalis.

Two other forms are described by authors, *I. sycosiforme* and *I. acniforme.* The former is really I. labialis, in which there is a good deal of swelling and tension, and the discharge heaps up into honey-like crusts, often just beneath the septum nasi. The latter is a suppurative inflammation of the hair follicles of the beard, and is often confounded with parasitic sycosis. But this impetigo of the beard is often an acute affection. There are impetiginous spots about the face outside the beard; it affects quickly at the onset a large extent of surface; it is more superficial than the parasitic variety, has more crusting, the hairs in the follicle are not loosened or rendered dry and brittle, and there is no fungus present. The disease may become chronic.

Secondary Changes in Eczema.—Any of the three chief varieties of eczema may become chronic, and in some cases the amount of discharge may be free and irritating. This state has been called *E. ichorosum:* or the discharge may not be sufficient to give rise to continuous crusting, but what is apparently only scaliness. This phase of disease has been termed *eczema squamosum.* If cracks occur, a raw red, perhaps an exuding, cracked surface, termed *E. fissum* (E. fendillé of the French) results. Fissures are often produced from the movements of the mouth. Again, induration may be a consequence, or the skin about an eczema may become œdematous or warty, or specially thinned, or the fibrous structures may greatly hypertrophy, and a huge, shapeless mass, with free ulceration, result. Hence other varieties have been made, such as *E. œdematosum, verrucosum, sclerosum, spargosiforme,* and so on. But really to dignify all these secondary changes by an elevation to the position and rights of special varieties is to me highly objectionable. The induration, papillary growth, and the like, have their origin really in special deviations of the tissue nutrition itself, the result of hyperæmia. There is not so much eczema present in these cases, as accidental conditions of hypertrophy or atrophy which frequently occur when eczema is absent as well as present. Eczema *squamosum* and pityriasis are often regarded as the same. In the former, the scaliness is secondary, in the latter (pityriasis), a primary item of disease—two totally different conditions. In some cases the "discharge" feature of eczema is not so well marked as in others. It may be but slightly marked, and then the erythematous aspect may predominate, the exudation may be slight, and only raise the cuticle into what appears to be papulation; or pus may be readily produced, or the secretion may quickly be reabsorbed, and scales be produced, or fissuring result at an early stage. It has been therefore said that eczema may commence as an erythema, a papulation, a vesiculation, a pustulation, a squamation, or a fissure. Now I admit that any of these stages of inflammation may be quickly arrived at, or certain of their characters be specially preserved. But in all cases the tendency is to the outpouring of a large quantity of serosity of special quality from the skin, as one of the characteristic occurrences. This outpouring of fluid necessarily tends in the first place to uplift the cuticle—*i.e.*, to the production of vesiculation, which rapidly disappears, because the cuticle bursts and discharges the fluid; but the tendency to free secretion exists, and is the main feature in the disease. I stated before that this vesicular stage has generally passed when the disease comes under the notice of the physician, though vesiculation *may*, with care, be made out at the edge of a patch which is on the increase. It is manifestly unfair to estimate the value to be attached to vesiculation, or its probable frequency in cases of eczema, from a consideration of such cases as are stationary or in progress towards recovery.

So far then I have described the standard varieties of eczema and their immediate consequences; I now proceed to speak of the peculiarities of these varieties of eczema as they are observed in different parts of the body.

E. Infantile.—This has the characters of eczema rubrum and eczema impetiginodes more or less combined. There can be no doubt that it is a very obstinate and severe disease. One often sees this form of eczema running through almost all the stages represented by the disease collectively. It generally commences in the very young child as an acute attack, subsides into a chronic state, which may last for a very long time, even years. The child is thin, pale, pasty, takes food badly, &c. When the eruption first appears its aspect is really a compromise between E. simplex and E. rubrum; the discharge then alters its character, and E. impetiginodes is presented to us. The local signs of irritation are more or less marked; there are heat, itching, pain, swelling, excoriation, rawness, or ulceration; the secretion may be thin or purulent, the glands in relation to the scalp—ex., behind the ears, and at the occiput and in the neck are swollen, and according to the aspect of the part attacked, whether moist or dry, the disease has received various names—*e.g.*, *tinea granulata*, *crusta lactea*, *porrigo larvalis*. It affects all parts, but especially the scalp, buttocks, axillæ, ears, and flexures of the joints. The child gets feverish, it loses flesh, and marasmus may supervene. If not properly treated, the disease becomes very chronic, and the child a pitiable object. In children who are somewhat beyond the baby age the disease is seen during dentition, in scrofulous children especially. When it attacks the scalp pediculi are common among the crusts.

Eczema capitis has been partly described, a moment since under the head of E. infantile, as it occurs in the young. In the adult the symptoms of eczema capitis are often very severe. After the acute stage is passed, which is that of E. rubrum chiefly, the secretion dries, and the whole scalp may present a raw, red, cracked surface, covered over more or less with lamellar scales of yellowish tint, or crusted all over. If there be hair on the head the discharge mats it into masses, and the hair formation is checked—that is to say, the hair is "thinned." In the process of cure, a state like pityriasis is produced. The disease is often very obstinate. In children pustular eczema (impetigo) is often excited by pediculi.

2. *E. faciei* is often an extension of the disease from the scalp; the secretion in this local variety is free, and forms large crusts, generally on the forehead, but also the cheeks and chin. The conjunctivæ are often red and tender. Itching is very troublesome. The disease is mostly symmetrical, and does not present an uniform aspect; here it is inflamed and red, there it is crusted over; here pustular and there cracked, perhaps. Like the E. capitis it is often confounded with seborrhœa.

Eczema labialis takes the form of eczema impetiginodes usually, but I have met with an unusual form of disease, or one attended with unusual results, which I may briefly notice here. The patients, who were both men, stated that the disease arose from a cold; that then the upper lip enlarged gradually so as to produce considerable thickening and swelling. It so happened that on one occasion a distinguished foreign dermatologist was present, and he suggested that the disease was of the nature of epithelioma; but the rapid cure and the history of the cases entirely set aside this explanation. When first seen the disease consisted of a swelling extending half an inch laterally from side to side of the frænum of the nose, and from above downwards to near the junction of the mucous membrane and skin. It was, in fact, an oval swelling, the skin being raised about three or four lines. The swelling felt elastic; it was not hard, but it was tender, and smarting was often felt in it. The colour was inflammatory. On close examination the hair follicles were seen to be more distinct than usual, and to be pustulating at their apices. There were here and there slight crusts. The hairs of the moustache, which had been cut off close to the lip, were not loosened nor altered in texture; but on pulling at them, much pain was at once experienced. In fact, it was, perhaps, the papillated aspect given to the general swelling by the enlargement and projection, so to speak, of the follicles that led to the idea of the disease being epithelioma: but, on careful examination, it was seen that the disease was clearly produced by inflammation of the hair follicles, implicating the fibrous tissue round about to a greater extent than usual. The history showed the case to have commenced by the extension of a catarrh from the mucous surface to the hair follicles. There was no free crusting, as in ordinary impetigo labialis. The disease might have been termed by some non-parasitic sycosis, which is of course nothing more or less than catarrhal inflammation of the hair follicles; but in the above instances the aspect was not so distinctly pustular as is usual in inflammation of the hair follicles about the face, and the swelling of the deep fibro-cellular structures was very marked—much more marked than usual. The disease began as an eczema, involving the parts about the hair follicles. I have met with many instances of the condition now described; and am emphatic in condemning the use of irritants, stimulants, or active absorbents in the early stage of the disease. All these remedies increase the follicular irritation. The use of litharge ointment so as to exclude the air, after hot fomentations, the avoidance of stimulating things, with alkalies and tonics internally, and subsequently strapping with lead or mercurial plaster, and the use, in the very chronic stage, of iodine, are most serviceable. But the avoidance of irritating applications, in the early stage, is the most important point to remember in reference to the treatment.*

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* Lancet, Aug. 6, 1870.

3. *E. aurium* is another sub-variety. The ear is red, swollen, tender, hot, and tense, the vesicles are often very well developed, and the discharge free, drying into crusts, which after falling, leave behind a dull red surface. The disease often extends into the meatus, causing swelling and blocking-up of the passage. More frequently, E. aurium takes on the aspect of E. impetiginodes, then the ear gets hypertrophied, and small abscesses are formed. In old people the ear is often affected. The disease is very obstinate.

4. *E. mammæ* is observed during lactation more especially, and is confined to the female sex. It is observed around the nipple, and the degree of inflammation varies: sometimes it is slight, at other times the aspect of impetigo is assumed, and there is oftentimes a tendency to the formation of fissures, with subsequent infiltration, and threatening abscess formation in the lax cellular tissue beneath. The nipple is hot, tender, and often bleeds. Hardy says it arises out of three conditions; in fat people, during lactation, and in scabies, and he believes correctly that it is an excellent diagnostic sign of scabies.

5. *E. manuum et pedum* is chiefly remarkable for the peculiar tenacity and persistence of the vesicles, due to the greater thickness in the cuticle of the hands and feet. The disease assumes mostly the aspect of E. rubrum on the back of the hands and between the fingers. The fluid in the vesicles, seated upon a red base, gets absorbed, and crusts are then formed; sometimes bullæ are produced by the coalescence of vesicles; accompanying pruritus is oftentimes severe. Presently the patch becomes drier, more scaly, thickened and fissured, the fissures giving exit to a viscid secretion which concretes into scales; the disease may assume a pustular aspect. The grocers' or bakers' itch is according to some authors an eczema of this class An acute form has been described, which commences by marked fever and malaise, the tissues generally are inflamed, bullæ form, and the fluid being absorbed, large scales are detached, exposing a red surface, which gives out a quasi-purulent discharge, and this is often followed by a chronic stage. This is eczema rubrum.

6. *E. genitale* attacks the anus, perineum, scrotum, and vulva, and is characterized by its very free secretion. It often commences at the scrotum, which is thickened, puckered, moist, and tender, covered with large thin scales, a thin fluid oozing freely from numerous fissures. It often extends from the scrotum to the anus and from the pudendum to the vagina, induces intolerable itching, and is attended with swelling, heat, redness, and discharge.

Varieties have also been made according to form; for example, when eczema occurs in round patches the size and shape of pieces of money, it is called E. nummularis.*

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* Many eczemas either become complicated with or are caused by parasitic growths. They certainly rapidly disappear with parasiticide treatment.

Eczema marginatum is the name given to a disease which is seen at the inner part of the thigh, or the fork. It is generally symmetrical, and presents a red dry, often scaly surface, which sweeps in a circular manner from the fork down the thigh for several inches. It is said to occur in shoemakers and dragoons as the result of heat and moisture. It is in reality parasitic, and will be described under the head of tinea circinata. I believe under this head different diseases are very likely to have been included—intertrigo, lepra vulgaris, erythema from pedicular irritation, eczema, and ordinary ringworm of the surface.

Pathology.—Speaking in general terms I may describe the morbid anatomy of eczema, in its earlier stages as consisting of swelling of the cells of the epidermis from imbibition of fluid, together with infiltration of serum into the substance of the corium and the rete, and the production of a large amount of new cell growth. The outpoured fluid finds its way to the rete mucosum from the papillary layer, separating the cell elements and uplifting the cuticle so as to form vesicles. The capillaries are much congested. When the cuticle is ruptured, the deep layers of the rete mucosum, or even the corium, may be exposed. In some cases the cells of the rete are intermingled with pus cells in great amount. As the result of the inflammation, certain hypertrophic and degenerative changes may subsequently occur in the deeper parts of the skin.

But it is necessary to enter into greater detail, and I may conveniently refer to the pathological changes occurring in eczema in the early stages (acute eczema) on the one hand, and the later stages on the other (chronic eczema).

First, as regards eczema in its early stage, Neumann,* in some experimental researches which he made as regards the artificial production of eczema in animals by external irritation, found that the earliest stage in the disease was a rhythmical contraction of the capillary vessels, which were now empty, now gorged, until complete stasis followed. Then free effusion of serous fluid occurred, with lively proliferation of the cell elements of the skin, especially in its papillary layer. This latter condition was coincident with the formation of vesicles.

And as regards this point Biesiadecki's researches,† whilst they are confirmatory, add to our knowledge of the phenomena observed by Neumann. Biesiadecki notices that there are always certain elongated cells intermingled with those ordinarily described as making up the rete mucosum, and that the peculiar cells are derived from the connective-tissue corpuscles (see fig. 2, p. 16). Now in acute eczema when the papillary layer of the cutis is being distended by serous effusion from the capillaries in the way described by Neumann, these spindle-shaped cells undergo rapid changes, and appear in greater numbers in the papillary layer, and also migrate to the rete. They are likewise pushed forward to the surface, together with the cells of the rete: but more than this, they branch very freely, and according to Biesiadecki, their branches unite so as to form a complete network of canals, in the interstices of which the ordinary cells of the cuticle lie. It is believed that through these canals, so formed, the large amount of fluid discharged in eczema finds its way to the surface so readily. Biesiadecki also affirms that pus cells, when present, are derived from the connective-tissue corpuscles. Others of course, and I referred to this in speaking of inflammation, declare that pus cells come from white blood cells escaped from the vessels. The following illustration will explain Biesiadecki's views.

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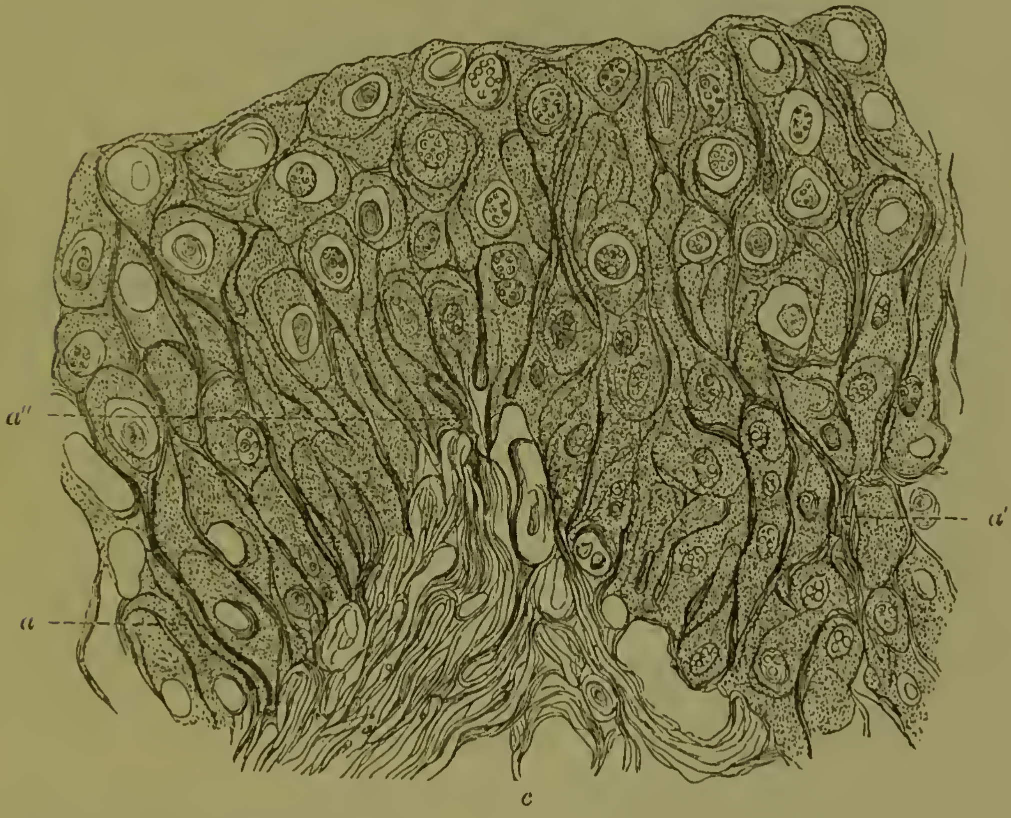
* Lehrbuch der Hautkrankheiten. Von Dr. Isidor Neumann. Wien: Branmüller, 1869; or Dr. Pullar's English translation.

† Beiträge zur Physiol. und Pathol. Anat. de Haut. Sitzungsberichte der Wiener Akad., vol. lvi. p. 225. 1867.

FIG. 14.



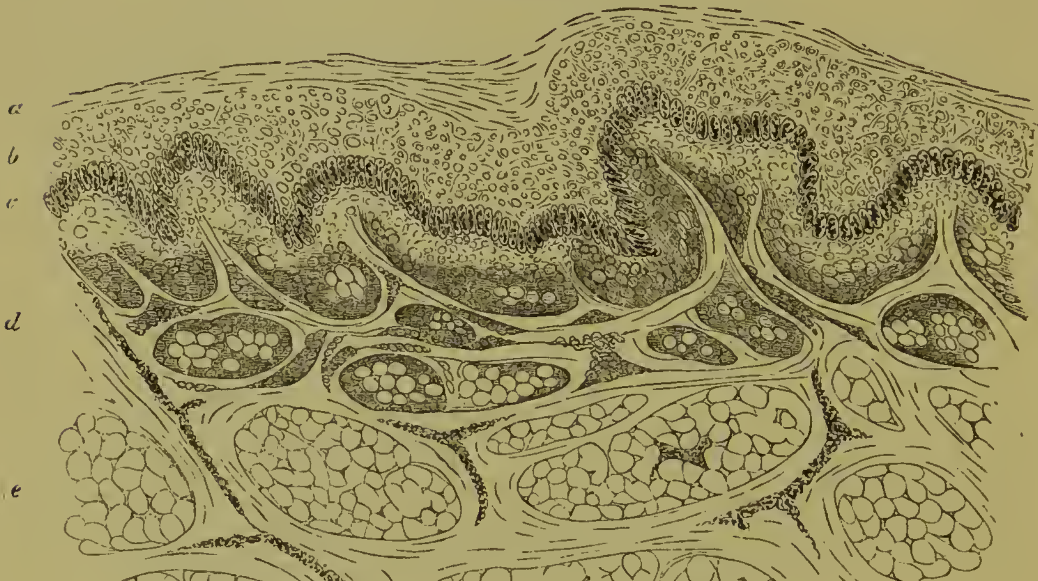
Eczematous papule (*after Biesiadecki*). *a.* Spindle-shaped cells, which numerously traverse the mucous layer. *a'* with several nuclei. *a''* half remaining in the corium. *c.* Papilla.

Now in some cases the hyperæmia lessens, the inflammation quiesces, effusion and cell proliferation cease, and the tissues gradually return to their normal state. In other cases the cell growth remains active, the outpouring of fluid continues to be free, and the changes are observed to extend deeper and deeper, and to implicate even the connective tissue below the derma; after a while, the organization of the cell tissue gives rise to an inflammatory hypertrophy, with more or less alteration of the vascular and other tissues invaded by the cell growth. And this leads me to speak secondly of the

Changes found in Chronic Eczema.—In the acute cases of disease the papillary layer and the upper part of the corium invaded by cells and effused fluid are not so far damaged but that they recover their normal condition. In chronic eczema, however, they remain engorged with new material, so that the papillæ are noticed as veritable projections over the surface of an eczema denuded of its crusts. The new cell growth is observed to be particularly marked about the vessels, and after a while these may be more or less obliterated by the pressure exerted upon them, and their place marked by strands of pigment, which is also formed between the papillary layer and the rete. But the new tissue may be removed gradually after having undergone fatty and granular degeneration and absorption.

The annexed (fig. 15) is given by Rindfleisch in illustration of the changes seen in chronic eczema and above described.

Fig. 15.

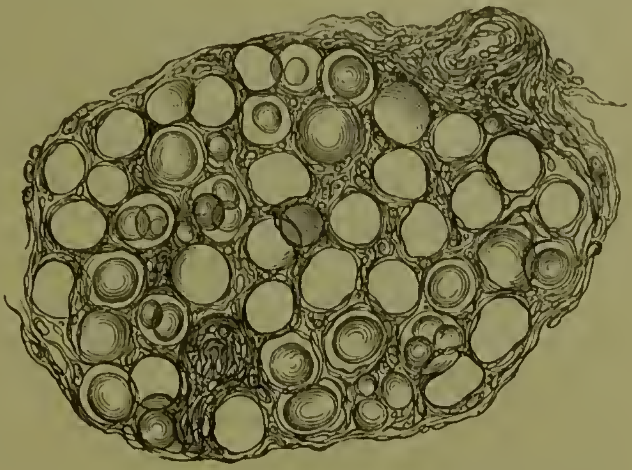


Vertical section through the skin after chronic eczema. *a.* Horny layer. *b.* Mucous layer of epidermis. *c.* Pigmented stratum of cylindrical cells. *d.* Papillary layer. *e.* Cutis pervaded by stripes of pigment.

The hairs and glands cannot be distinguished in some cases. The papillæ may be less elevated than in health, being pressed upon by the new tissue. But in very chronic cases these changes, due to infiltration, are to be seen as deep as in the panniculus adiposus. Fig. 16 is Neumann's representation of such a condition. It is not difficult to account for the obstinacy of eczema if one remembers the exact changes that go on in the tissues.

The close analogy existing between eczema and catarrhal inflammation of the mucous surface, in which as a consequence of the impression made by some irritant, generally cold, upon the part, serous effusion into the fibro-cellular mucous membrane with free outpouring of the same fluid, distension of the upper layer of the mucous membrane (answering to vesiculation), shedding of the epidermis, and the formation of more or less pus in the discharged fluid, with subsequently chronic inflammatory thickening in its various degrees take place, must, I imagine, strike the reader very forcibly: and if he will recollect the peculiar cell changes and the general concomitants of eczema, he will at once see that it is impossible to include with it such diseases as pityriasis rubra, lichen, &c., as some do.

Fig. 16.



Cell infiltration around separate fat cells of panniculus adiposus in chronic eczema.

In reviewing the morbid anatomy of eczema, one or two interesting and pertinent questions arise in this place. For instance, it is important to know what relation exists between the capillary congestion and the cell proliferation. Is the vascular alteration the consequence of cell activity—that is, is it the response to a hyperactivity of the cell elements, which acts, if I may so say, as a *vis a fronte?* Or is it the reverse?—is the cell proliferation the result of an increased supply of nutrient fluid sent to or retained in the part? for according to Neumann's experiments there is stasis in the vessels as one of the early phenomena. I am much inclined to think that in eczema both cells and vessels play an important and somewhat independent part in obedience to a nerve-paresis. Mere capillary excitement does not give rise to serous exudation, cell proliferation and migration, escape of blood cells, as seen in eczema. If that were the case, erythemata would be observed overstepping their present limits, and where there is actual stasis in the vessels, as in psoriasis, all the sequences of eczema ought to occur. Mere capillary changes are unaccompanied by special cell changes; but these latter involve the former. *A priori*, one is led to believe that there is some cause at work which directly stimulates the cell proliferation in eczema, and that the direction which this takes towards pus formation on the one hand, or fibrillation on the other, depends upon the general nutritive tendencies of the person attacked. The active cell proliferation *may* imply and induce capillary excitement; but it seems that the two things are coincident, for they arise, apparently simultaneously. Now what can account for this duplicate condition? I think an alteration in the innervation of the part attacked. Looking to the general mode in which eczema is induced, to its history, and to the researches which have recently been published by Heidenhaim, Pflüger, Eckhard, and others, as to the influence of nerve irritation in the production of tissue changes, I am quite disposed to agree with Hebra that in eczema "it is *faulty innervation* which is the most important element in its production" (vol. ii. p. 140). At any rate these things show the influence of nerve upon tissue. Hebra, however, believes that perverted innervation is the prime cause of eczema, by its leading "to congestion and other disturbances of the circulation," and he does not refer to the influence of nerve irritation in directly inducing cell proliferation. This latter is, I think, a necessary point to be admitted in explaining eczema.

My experience has led me to conclude that eczematous subjects, as the rule, are thin, pale, and ill-nourished. Their skins are *irritable and dry.* They possess little, often no, subcutaneous fat; and mal-assimilation, exposure, over-work, anxiety, and other influences which induce a lowering of tone, have operated upon them. An impressionable condition of the nervous system, or a lowering of nerve tone, is an essential condition in the evolution of eczema, it seems to me. I conclude, therefore, that, as faulty innervation is at the bottom of eczema, the existence of a dartrous or eczematous diathesis is not only unnecessary but unproven.

Exciting Causes and Modifying Influences.—Admitting such a condition as that described—viz., nerve-originated-disorder in vessels and tissues, to be at the bottom of eczema: it is easy to appreciate the action of one group of exciting causes that play a prominent part in the evolution of the disease, and cause what are termed *idiopathic* eczemas. Reference is made to local irritants of a chemical or mechanical nature; to the action of heat, cold, and water; the influence of occupation, in which the skin is stimulated by the blaze of the forge, the handling of sugar, flour, lime, or the like; and to the excitation of the surface by scratching, as in scabies, prurigo. All or any of these may be in operation in a certain number of cases, even in some intensity, and yet no ill results will follow in the *healthy*—at least in the shape of eczema; whereas in other instances—the eczematously disposed—where they are by no means active, eczema readily shows itself. But there is a class of so-called causes that act from within the body upon the skin, comprising changes in the solids and fluids of the body, that rise to *symptomatic* eczema, as it is termed. And here we are brought at once face to face with the influence of constitutional conditions in skin diseases. Leaving out of consideration for the present the case of hereditary disease, I venture to think that though there is no special blood-state upon which the local manifestation of eczema depends, yet that alterations in the nutrition at large may act in helping out the development of, or in modifying, eczema.

In the first place, general debility is often an accompaniment of the disease. In such case the resistant power or tone of the body generally is lowered; and it is needless to argue that, under these circumstances, local irritants will do their work easily and effectually. A thorough chilling of the surface will induce an attack of eczema as much as that of bronchitis.

Secondly, all disorders which are connected with retention of excreta in the system, and their circulation throughout the blood-current, may furnish the exciting cause of eczema. This is a clinical fact of very great importance. Given the tendency to eczema, then the transmission of uric acid through the capillaries of the skin will so far derange as to aggravate certainly, and now and again excite, an eczematous eruption. This is what is meant by gouty eczema; and by securing the absence of the uric acid from the circulation, the eczema will often disappear, and always be more amenable to treatment. The passage of uric acid through the cutaneous capillaries of an eczematous subject acts as much the part of an irritant as do some externals. A gouty state of blood may, therefore, excite and modify eczema. Such cases as I now refer to sometimes exist off and on for years, and are saturated with arsenic and mercurials, but which are only relieved by recognising the complicating item of the free production and circulation of uric acid, and by instituting a *régime* calculated to arrest the continuance of those conditions.

Another instance in which the retention of excreta may be observed aggravating, and it would even seem occasionally exciting, eczema, is in the case of those beyond midlife affected with eczema of the legs. In some of these cases there is, and has been for some time, deficient kidney action, and if a careful analysis of the urine be made, a deficiency in excretion will be observed. In other instances, I am quite aware that an excess of urea may be detected in the urine; but the latter is scanty, and it is doubtful if the total solids got rid of are in excess of that of health. At least, that particular treatment which is successful in the cases named seems fully to confirm the truth of the proposition that retention of excreta may influence eczema. But in some of these instances the presence of effete products, and even their excess in the urine, may be explained by the torpid action of the skin. Dryness of the skin is one of the features of the eczematous habit; and an inactive cutaneous surface now and again is one element in the evolution of eczema, no doubt by the influence it has in leading to the impurification of the blood-current; and where the kidneys at the same time fail to work perhaps as well as usual, the consequence must be the retention of waste products to a large extent.

It is scarcely necessary to speak of the connexion between eczema and the circulation of bile-products, because the same line of argument as that already used holds good in this case. The passage of bile through the skin in a predisposed subject may certainly excite eczema. It must also be remembered that the presence of morbid products in the blood tends to retard the ordinary process of repair, so that the chronicity of a disease may well be explained in part by the conditions just now enumerated as dependent upon hepatic or renal derangement.

Dyspepsia influences eczema much. In dyspeptic subjects eczemas are very obstinate; inasmuch as such patients are weak and debilitated from mal-assimilation.

A certain relationship exists between eczema and the strumous diathesis, the latter leading essentially to a modification of the typical disease. I suppose it to be quite unnecessary to adduce facts and figures in proof of the presence of the strumous diathesis in a goodly number of those who are attacked by eczema, especially in the case of the young, and still more to show that the particular form of disease which is seen under such circumstances is what is called eczema impetiginodes. Now the leading peculiarity of this variety is the tendency there is to the formation of pus, and that from the outset of the disease; and this not from the intensity of the inflammatory action, for the pus formation is not in direct ratio to the severity of the local disease. If anything is to be accepted in medicine, it is certainly the existence of a pyogenic habit in those who are strumous. What more is to be expected than that, when eczema is set up in the strumous, and cell-proliferation commences, the tendency to the formation of pus, so strong, should operate upon the changes that *ordinarily* go on, so that a modification of the usual cell-growth results? The eczema is present, but it is impressed by the peculiar nutritive tendency of the individual whom it attacks. And not only is this influence of the strumous diathesis observed in young people, but now and then—I am inclined almost to say not uncommonly—in those of mature and even old age. One would imagine, from the little recognition of the strumous diathesis in persons of advanced age, that it wears itself out, or is non-existent and non-operative after a certain time of life. I venture to think this is a very grave mistake. True is it that those special declensions from health, and that general aspect of face and form which are commonly accepted as characteristic of the strumous diathesis, are not observed in the aged; but there are not wanting the evidences of their past occurrence, whilst the tendency to pus formation, to unhealthy ulceration, and indolent repair, in connexion with that particular kind of treatment which acts most effectually, points to the operation of an old strumous taint as best explaining the modification of eczema which is observed. The nature of that modification is well expressed by the tendency just mentioned to suppuration, ulceration, and indolent repair.

I have thus far, then, concluded that eczema is not dependent upon the existence of a crasis or diathesis in the general sense of those terms, but upon an impressionable condition of the nervous system, in which the control of the latter over the nutrition of the skin is somewhat lessened; that external irritants, acting locally or generally; and internal agencies, such as the circulation of waste and effete products, may excite eruptive phenomena; and that the changes in the cell elements may be modified to some extent by the special nutritive proclivities of the individual. Theoretically, where external exciting causes are at work, and the eczematous tendency is not marked, the eruption will be localized; but it may be symmetrical where the exciting cause operates on symmetrical parts, as in the case of eczema of the hands in bakers and washerwomen; or when it acts generally on the surface, as in the case of cold. Where, on the other hand, the immediate excitant of eczema is an internal cause, then the eczema is more or less general, and it is in these cases that the inflammatory and impetiginous forms are usually met with.

The history of infantile eczema might seem at first sight to stand in antagonism to these propositions; but, on calling to mind the concomitants of infantile eczema, it will be found entirely to confirm their truth. The tissues of the skin in the young, in the first place, are rapidly and readily irritated; slight friction, cold, or heat induces mischief, which is unaccounted for save on the supposition that there is a great tendency to inflammatory changes, involving disturbance of the circulation and cell-life of the tissues, incidental to infancy. A bronchitis is as readily evoked as an eczema. So that the skin is not alone peculiarly sensitive. And if it is possible to easily excite extensive changes in a mucous surface without the presence of any diathesis, it seems indeed strange that it should be supposed that analogous results may not follow in the case of the skin under similar circumstances. Then, secondly, infantile eczema is observed in lymphatic and often markedly strumous temperaments; in the ill-fed; in the hereditarily eczematous; in the uncleanly, and those who are otherwise badly hygiened; in the children of weak parents; in those who exhibit mal-assimilation, evidenced too plainly in the pale stools, the dyspepsia, the passage of food in a more or less undigested state, and the imperfect absorption of all fatty matter; after exposure to cold; in connexion with debility consequent upon the occurrence of acute febrile disease; after the disturbance of the system produced by vaccination; in connexion with teething, and so on. Now here is a catalogue of concomitants that lead to the *perverted innervation* to which Hebra refers. What room is left for the operation of a special diathetic condition? What need is there to suppose its existence? I see none whatever. I think we are apt to judge of the existence of a special diathesis in infantile eczema because the strumous diathesis is often present in the disease, but it acts only as a modifying agency. There exist undoubted facts which go to prove that eczema may directly originate in the skin without there being a specially related blood-change as a cause, and yet be modified by diathetic conditions. The occurrence of an eczema without there being a diathesis, in the ordinary sense of that word, is not more difficult to comprehend than is that of an extensive bronchitis or muco-enteritis.

I may make one or two remarks as to "syphilitic" eczema in infants. There are certain instances of pretty general and obstinate eczema in young children, in which there is not much discharge, not much crusting, but swelling, more or less induration and scaliness, sometimes dark scabs, accompanied by a dirty or actually pigmented state of skin, and often what looks like a pityriasis, with slight puckering about the corners of the mouth. Now and then there are patches of eczema nummulare about the belly, and coincident intestinal irritation, but apparently nothing else. These cases do not improve under the usual treatment for infantile eczema. They get well under anti-syphilitic treatment—at least the use of mercurials. There is often a history of syphilis to be found in the parents. The cases referred to do not arise out of a regular attack of congenital syphilis. Now, the fact that the bichloride of mercury cures them is not positive proof of their syphilitic nature, for it may be that, as in chronic eczema with induration, the remedy controls and alters the tissue changes. I look upon these as instances, not of syphilitic eczema, but of eczema occurring in and modified by the syphilitic diathesis.

It may be well to make particular reference to the influence of teething in eczema. I find Hebra saying that "great abuse is made of the teething of children, as of their temperaments; and just as every cough, colic, fever, diarrhœa, cramp, or fit in an infant is put down to teething, so eczema is ascribed to the same cause when it occurs at this period. And although," he continues, "I by no means ignore the influence which this physiological process is capable of exerting upon the whole of the organs and functions of an infant, yet I cannot admit it to be a cause of eczema."

What Hebra says is true, but it falls short of proving that teething *never* excites or influences eczema. Connected as the process of dentition is with febrile and gastric disturbance, with irritation of the nervous system, and capable as it is by reflex action of influencing almost any part of the body, I cannot see how it can be otherwise than that now and again the skin should be disturbed by it. The coincidence of irregular dentition with infantile eczema, the rectification of derangements of the former with subsidence of the latter, and such-like relationships, seem to show that if teething be not a real cause, yet it may be an excitant of eczema.

So far I have said nothing of hereditary influence in the genesis of eczema. This is perhaps the most opportune moment to refer to it. Is eczema ever hereditary? It is quite certain that eczematous subjects do not necessarily transmit the disease, however marked it may be in their case. Further, having regard to the great frequency of eczema, it is certainly comparatively uncommon to meet with cases in which that disease seems to be hereditarily transmitted. On the other hand, there are occasions when the prevailing disease tendency, in several or all the members of a family, is to the development of eczema, and at an early age, too; this tendency being apparently best accounted for by the supposition of an hereditary bias. Hebra remarks that the fact that in a few cases whole families may be found affected, must be viewed as exceptional when contrasted with the general results of experience. This is true enough, but I do not agree that it can only prove at the utmost that eczema in parents does not exclude its occurrence in their children. Of course it is in infantile eczema that observers are wont specially to recognise hereditary influence; but the conditions that concur to alter the nutrition of the child's skin, to which I have referred, if due allowance be made for their influence, leave scant room for the operation of any hereditary transmission in the majority of cases, equally with that of a peculiar blood state. But, on the whole, I do not think that, as far as clinical observation goes at present, one can refuse, especially in cases where two or three or more members of a family are affected by eczema, and there is a history of the same disease in the parents, to allow that father or mother may have really handed down the affection to son or daughter. What seems to me of importance to state is this—that, in order that eczema may be hereditarily transmitted to an offspring, it is not needful that there exist in the parent an eczematous diathesis in the ordinary sense of that term. If peculiarities of local form and aspect can be handed down, why may not dispositions to abnormal nutrition localized in one organ or tissue of the parent be repeated in the child? If heart disease runs in a family, why may not skin diseases do likewise? If xeroderma, and its more advanced stage, ichthyosis, which are certainly not blood diseases, be hereditary—and they unquestionably are so—why may not eczema behave in a similar manner without it being a blood disease? Admitting, therefore, the occasional hereditary transmission of eczema, I find in that event no ground for supposing that there is a special eczematous crasis or diathesis.

I have now analysed the disease under consideration in its supposed dependence upon constitutional conditions. Now I turn to notice the relation which subsists between eczema and other coincident local diseases, often affecting important internal organs. Bronchitis of a sub-acute kind is not an unusual coincidence, as is the case of many other diseases, but it may sometimes have special relation to the eczema. I have had under my care recently at

University College Hospital, a couple of interesting instances of the kind, in two children three and four years old, the subjects of general and chronic eczema, modified by the strumous diathesis: and in whom eczema has existed off and on since the age of a few months. Exposure to cold is almost sure to bring out the eruption afresh in the skin, if the children are not in what is regarded by the parents as "good health." Not many days since I missed one of these patients, and found that the child had caught cold and become attacked by bronchitis, there being a large amount of expectoration. The skin during the attack, the mother remarked, got nearly well as regards the discharge and crusting: and this has been the case on several occasions. The brothers were very liable when young, the mother remarks, to bronchitis and eruptions also. I have seen a similar relation established between the skin and mucous surface of the intestinal tract.

In such cases as these the vicarious relation between the affection of the skin and mucous surface has led to the use by some writers of the term "substitutive" as applied to the eczema. There is no difficulty in understanding that, when active disease is going on in the mucous membrane, the skin will be quiescent, and *vice versâ*. One would be inclined to recognise in these instances the necessity for a specially tonic plan of treatment, and to question the value of arsenic or any other agent that can in any way irritate the mucous surfaces. Save the fact that there seems in these cases a general disposition to irritability of the tissues—and there is every analogy between eczema and catarrh of the mucous surface—there does not seem to be much more of clinical interest in these cases, so far as the question of etiology is concerned. Authors have described the occurrence of bronchial asthma in connexion with eczema, but the remarks just made touching sub-acute bronchitis may be held to apply generally to asthma, which is dependent upon the changes occurring in the air-passages during the bronchitis itself. Another affection of a mucous membrane—viz., leucorrhœa—seems to bear occasionally the same relation to eczema as does bronchitis or intestinal catarrh—that is to say, it is "substitutive;" and I think I have seen something of the same kind in connexion with the urinary passages. Now, in none of these cases is there any such thing, I take it, as metastasis in the strict sense of that term. The disappearance of an eczema from the skin, in connexion with the development of a bronchitis, is a consequence and not a cause, of the latter, which is evoked by its special excitant, cold or what not. One finds, of course, the affection of the mucous surface frequently absent in the severest cases of eczema, and *vice versâ*; but the occasional substitution of the one for the other, and the peculiar nature of the coincidence referred to, do certainly convey to my mind—that is, taking the whole history of these cases into consideration—the impression of the close analogy which subsists between "catarrhal" inflammation of the mucous membranes—in which the free secretion is the marked feature—and eczema; and it is open to proof that the two originate under similar conditions, and admit of the same essential treatment. Dyspepsia is a common companion, too, of eczema, and it may be in some sense substitutive, but not markedly or frequently so. It leads, when present, to debility, of course, and to imperfect excretion necessarily—two conditions eminently favourable to the occurrence of eczema.

The influence of renal disease on eczema has been referred to. Anything which, in those disposed to eczema, throws additional work upon the skin may help out the disease, especially if the renal excretion of nitrogenous matters is diminished, and excreta, together with watery fluid, are accumulating in the system.

It has fallen to my lot to see several cases of eczema in connexion with heart-disease leading to dropsy, and, I think, helped out by the general derangement induced by the altered circulation. Such cases are greatly relieved by treating judiciously the cardiac mischief.

It is necessary to say one word in regard to the part played by mental emotion in leading to attacks of eczema. Hebra says that the connexion as cause and effect between disorders of the mind and mental emotions and eczema, which appears as an axiom in every book on the subject, is a mere fancy thrown out at random. I agree with him so far as to mental disturbances being true causes of eczema; but, I think, in virtue of their depressing influence, when that is exercised upon the body generally, that they always leave individuals more open to the attack of eczema than if they were not in operation, and trouble, worry, and mental anxiety are often observed to aggravate the disease.

Summary of Etiological Considerations.—I will try to gather up into a general statement the main propositions which have been submitted to the reader's consideration under the head of Etiology. It has been the rule to regard eczema as an inflammatory disease, and the expression of a diathesis, styled by the French the "dartrous diathesis"—a convenient term, as McCall Anderson says, to cloak our ignorance of its nature. The word "debility" has been used to characterize the constitutional condition upon which eczema is thought to depend. What is really meant is that the local changes in eczema are due to an altered state of the nutritive fluids of the body, and primarily of the blood. Now, I recognise the fact that eczema may be *modified* by diathesis, but that it is not essentially the result of any special alteration of the blood-current. And I look more particularly for the origin of eczema to the skin itself. It is clear that alteration of the blood, followed by hyperæmia, is quite incapable of explaining the phenomena of the disease, and that changes originating in the cells of the derma and rete mucosum have very much to do therewith. Modern research seems to point to an altered relation between the nerve force and the cell life as the starting-point, or the reason why eczema occurs; for nerve irritation certainly can give rise to cell proliferation, and it seems clear that nerve-filaments run to, and lose themselves in, the rete where the changes in eczema are the most marked. Well, given "perverted innervation," as Hebra terms it, it is easy to understand that agencies, acting both externally and internally, may readily evoke—though not *per se* cause—eczema; though eczema is modified by altered blood-states or constitutional tendencies, such as gout or struma. The influence of organic or functional diseases of important organs is a matter requiring to be more distinctly appreciated, in so far as these throw more work upon the skin, lead to debility, or the impurification of the blood-current. The mucous and cutaneous membranes exhibit, it would appear, a remarkable similarity in regard to the essential pathological changes that take place in catarrh, on the one hand, and eczema on the other; so much so as to lead one to suppose—allowing for difference of texture and accidental surroundings, such as heat, moisture, and exposure to the external air—that the two above mentioned are analogous affections. This is the more probable on a consideration of their now and then decidedly "substitutive" correlation. Speaking in broad terms, it may be said, moreover, that the cause of eczema is multiple; it is perverted innervation as a *sine quâ non*, but plus—not as causes, but part causes or excitants in a variety of combinations and varying frequency of co-existence — general debility, morbid blood-states, strumous diathesis, local irritation of the most diverse kinds, disease of important viscera, mental depression, and so on. This shows that the dermatologist must comprehend the nature of diseases in general ere he can treat eczema successfully.

Diagnosis.—I hold, of course, that the main feature of eczema is the presence of a peculiar "discharge," which dries into thin yellow crusts. However long standing any case of eczema may be, it will always furnish sufficient evidence in its history of the fact of its being a *moist* disease. If attention be given to the point it will soon be discovered (what I have repeatedly insisted upon as an important clinical fact) that in the vast majority of cases the disease has existed a long time before it comes under the notice of the practitioner; that the early stage is rarely seen, only in those cases in which the disease is general and severe and the constitutional affection is sufficiently grave to compel the patient to seek for medical advice at once. The vesicular stage consequently rarely comes under the eye of the physician. If the patient be closely taxed as to antecedents, he will often state that the disease began with redness, that then little bladders or watery heads formed, and the surface began to "weep" or "discharge." Where eczema is on the increase the vesiculation may frequently be detected at the edge of the patch. It is the "catarrhal" aspect of the disease which I regard as so "characteristic." There is as much difference between eczema and lichen as there is betwixt bronchitis and pneumonia; and there is this additional distinctive mark of eczema, that the application of irritants will mostly evoke "discharge;" *i.e.* there is a capacity for discharge always present that is absent in other similar diseases. There are many diseases confounded with true eczema; these vary according to the stage and "age" of the eczema. *Acute general eczema* may be mistaken in the first place for one of the acute specific diseases, in consequence of the pyrexia which is sometimes present. The redness, too, has a somewhat punctated appearance at its earliest stage, but very quickly all doubt vanishes by the fact that the eruption is clearly out of all proportion, as regards severity, with the pyrexia. The patient is not so ill as he or she would be if the case were one of zymotic nature, and the vesiculation rapidly shows itself. Acute general *lichen* is accompanied by much itching. It affects particularly the outside of the limbs. Though the eruption is well developed and plentiful, it is truly papular, the papules feeling hard and dry, and there is no "discharge," and no crusting. The inflammation is decidedly plastic as distinguished from *serous:* and this applies to all cases of lichen. Again, the slighter forms of eczema may be mistaken for *Erythème vésiculeux* of Hardy, which arises from the application of a local irritant, and is characterized by vesicles upon a red base. The latter disease is of short duration; it has no tendency to spread, it is localized and the discharge is not viscid stiffening linen like that of eczema. *Intertrigo* is produced by an evident cause—the friction of two surfaces; its seat is the folds of the skin in apposition, and it is marked also by absence of vesicles and crusts, no less than by the presence of a thin muciform secretion.

No error should arise in diagnosing ordinary *erythema,* the negative evidence in regard to discharge and crusting sufficing. *Erysipelas* is an acute and severe disease, accompanied by shining, tense, smarting swelling, upon which are developed phlyctenæ; there are no pustules, vesicles, &c. The definite course of *herpes* with its small bullæ collected together upon a red base, which do not burst, but shrivel away in a few days, with the absence of light yellow crusts—should define the difference between it and eczema. In *sudamina* the vesicles are large, scattered over a large extent of surface, developing after sharp perspiration, generally in the course of acute pyrexial disease, and drying up in a few days, with slight desquamation. Occasionally one sees, especially about the hands (the palms), a form of disease which appears to be an eczema, in which the fluid has collected beneath a tough layer of skin, which is somewhat raised if the disease be left alone; the skin peels off in a thickish layer, leaving behind a reddish more or less tender surface, which does not crust over but simply dries. If the disease be attentively examined at the outset, the fluid will be seen to be perfectly clear (not milky), and to be distending, as I believe, the perspiratory ducts, escaping thence beneath the upper layer of the cuticle. This is an idrosis, an acute outpouring of fluid by the sweat glands, accompanied by an inflammatory condition, and as a consequence, death of the upper layer of the cutis. The disease is always classed with eczema. The treatment however is somewhat different. In *scabies* the vesicles are scattered, not confluent; they are acuminated, and present the well-known furrow, at whose end the acarus lies imbedded and may be detected. There is no inflammatory base as a rule. Eczema may be interdigital, and then lead to confusion; but in scabies the eruption is seated on the anterior surface of the forearm, about the breast, abdomen, the buttocks, and the penis; on the feet, pustules (impetiginous and ecthymatous) are present. The itching is intense at night, but relieved by scratching. In scabies, crusts contain acari. In its more chronic (the pustular, and scaly) stages, the confusion of eczema with other diseases is of frequent occurrence. Where the body generally is affected confusion may arise in the case of general psoriasis, pityriasis rubra, and pemphigus foliaceus and lichen planus. The necessity for distinguishing between general eczema and psoriasis is great. The history of "discharge" in the eczema case is here the main guide. An eczema so severe as to cover nearly the whole body could not be without the "characteristic" discharge at the outset of its course. The scales are epithelial in psoriasis, and only partially so in eczema, in which disease the crusts are made up of blastema with granular cells, and pyoid corpuscles (inflammatory products). The disease in psoriasis, seen generally very clearly on the elbows and knees, or head, is an hypertrophy chiefly of the epithelial layer of the skin, the papillary portion being involved: whereas eczema is an inflammatory and exudative affair, and moreover in psoriasis the disease affects the elbows and knees particularly, and consists of patches covered over by very silvery white scales. Nothing is more certain than this contrast. The origin of the disease in *pemphigus foliaceus* is from bullæ that first appear about the chest, and thence invade the general surface: they abort and are replaced by large scales and incrustations, the scales being often thick like parchment; the skin is not infiltrated; the disease is a general one. In *pityriasis rubra* the whole of the body is implicated, presenting a dry red glazed surface, with no infiltration of the skin, but the formation of scales that now take the form of branny flakes, now of large thin squamæ easily detached; more extensive plates may form. All kinds may be present in the same subject. In some cases there are patches of skin that remind one in the feel, of a piece of dried bladder, only that they are reddish. There is no discharge, merely redness, desquamation, and condensation, without much itching, burning, or other uncomfortable symptom.

When the eczema is not general but local, difficulties frequently arise. I include impetigo under the term eczema, save in the case of the contagious impetigo, which in its "sparse" and "contagious" nature cannot but be recognised. The inflammatory form, eczema rubrum, attacks several regions at once; the rigors, smarting, and pyrexia may make one suspect sometimes the advent of erysipelas. When eczema attacks the hands, bullæ may form in consequence of the coalescence of vesicles, and pemphigus may seem to be present, but the occurrence of the vesicles or crusts elsewhere in eczema, and of bullæ in pemphigus, will suffice to avoid error. *Tinea circinata* (when well marked) I have seen more than once mistaken for eczema, but the red base with minute vesicles upon it when they are present, and the peculiarly well-defined and perfectly circular shape of the patch in the early stage, and the delicately scaly or "frayed" aspect of the tinea—the scales being formed not so much by discharge as by epithelial scales, which are readily recognised under the microscope—and the detection of a fungus, should settle the diagnosis. There are several phases of tinea generally regarded as eczema, and I refer the reader to the section on tinea circinata for fuller information on this point. Seborrhœa sicca or squamosa, and even seborrhœa oleosa, are mistaken, I believe, generally for eczema. There is in ordinary seborrhœa no "discharge;" there is a red surface which becomes covered over with little dirty yellow flat crusts, which are made up of fatty and epithelial matters, and on these being picked off, which may be done pretty readily, the surface beneath is seen to be red, dry, and somewhat glazy, the sebaceous follicles, moreover, being somewhat distended and prominent. In other cases the sebaceous flux may be of a more oily nature, and then there is less crusting. There is a discharge, but it is fatty, and there is not the crusting of eczema, whilst the sebaceous glands often atrophy somewhat. But this form of seborrhœa may take on the aspect of eczema facici, the naked-eye difference between the two being the peculiar oily, honey-like character of the discharge in seborrhœa, and the absence of "crusting" which one would expect, having regard to the amount of discharge, were it eczema.

From eczema, *favus* and *tinea* would be known at once by the microscopic characters of the scales and hairs.

Lastly, eczema may complicate and occur together with other diseases: with lichen, scabies, or even psoriasis, &c.; and in such instances there is necessarily a blending together of the characters of the separate diseases. To remember the possible co-existence of diseases is one of the first necessities to a safe diagnosis.

Treatment.—I now come to the important question of the treatment of eczema in its different forms:—

General Considerations.—Firstly: It is important to remember that a typical case of well-marked eczema has certain stages through which it must pass more or less rapidly in its progress towards cure—viz., erythema, vesiculation, ichoration, pustulation, and squamation. Now in the earlier stages the object should be to moderate inflammatory action—I use this term as a convenient one for the vascular and cell changes; and in the later, especially that of squamation, to rouse the skin to a healthy action, so that those changes which are comprehended in the words "chronic inflammation" may be prevented occurring. The treatment is, as the rule, essentially *palliative* in the earlier, and *curative* in the squamous stages; or first soothing, and then stimulating.

Secondly.—Under certain conditions, however, the practitioner may really hope to cut short or to abort an eczema. This can be effected only in the slighter forms of the disease, and more particularly those excited by local irritants; or by the employment of treatment at the very earliest moment. In instances of eczema connected with internal disorder it is difficult and uncommon to prevent the disease running through its ordinary stages. It should be our desire to conduct the disease through and past its discharge phase towards that of squamation.

Thirdly.—It is requisite to distinguish between what is essential and what is accidental in eczema. The capillary dilatation, the cell changes, and the escape of fluid giving rise to vesiculation, and so on, with the disturbance of the epithelial formation, all dependent originally upon perverted innervation, constitute the essentials; the strumous and gouty diatheses, organic diseases of internal organs, and the consequences of chronic congestion, &c., form the accidentals, which in some instances powerfully influence the real disease.

Fourthly.—Inasmuch as perverted innervation plays an important part in the genesis of eczema, and as cell proliferation can be induced by nerve irritation, the main treatment of eczema must be of a soothing nature, especially as regards local treatment in the early stages.

Fifthly.—There is no specific for eczema. That is to say, eczema does not depend upon a special blood-state which is alterable by the use of any particular drug; for that is the idea which prompts the employment of specifics for eczema.

Sixthly.—It would seem that there is no better term than debility (pure and simple) by which to describe the general condition which is most intimately connected with the evolution of uncomplicated eczema.

Eczema then is a curable disease, running, as the rule, through certain definite stages—the passage through which should be promoted; aggravated by anything that "irritates" the skin itself, from within or without; occasionally relieved, or even aborted, in its slighter forms or earliest stages, by soothing remedies; liable to be complicated by accidental occurrences consequent upon the persistence of congestion, such as œdema, induration, atrophy, &c.; modified by constitutional conditions, especially gout, struma, and syphilis; influenced by organic diseases of vital organs—the liver, the kidneys, the heart, the stomach; associated always with a lowering of the general vitality of the system, and not cured by any "specific." I venture to lay emphatic stress on two of these points—viz., the modification of eczema by different constitutional conditions, and the necessity for adopting a soothing plan of treatment always in the earlier stages of the disease.

It is impossible for me to deal with my subject in such a way as to meet the necessities and peculiarities of every case that may present itself to the practitioner, so varied are the complications and concomitants of eczema. I can only deal with general cases. I assume that in all instances the practitioner starts by correcting any deficient action of the emunctory organs; that constipation, hepatic torpor, or congestion, dyspepsia, deficient renal excretion, or inactivity of the skin as a whole, be remedied. It is the more necessary to attend to these matters in eczema, because the general debility involves in many instances a more or less sluggish action of the excretory organs, and this, by loading the blood-current with effete products, does tend to retard the reparative process, if not to aggravate the eczema. The careful examination of the urine at the outset often reveals the existence of conditions that at once put one on the right track as regards treatment. Deficiency or excess of urea, the presence of uric acid or phosphatic deposits in large amount, or oxalates, may be detected under different circumstances, and point to the brain or liver as in error, whichever the case may be.

There appear to me to be three questions which every practitioner should ask himself when a case of eczema falls into his hands for treatment—Of what variety is it? At what stage is it? and What are its complications?

First, as to variety. It is here that Willan's division of eczema becomes so satisfactory. Though, as I have already stated, there are no hard-and-fast lines between the simple, the inflammatory, and impetiginous varieties of eczema, yet they are broadly distinguishable in the general run of cases.

Secondly, as to stage. If the skin of an eczematous subject be essentially irritable, as I believe, then, whenever and as long as any local inflammation is present, or there is pain, must one soothe. At the very outset of an eczema sedatives may much abate, though rarely stay the progress of the disease. This happens in cases of eczema simplex; but as a rule cases run on to the discharge stage. I hold most resolutely that until that stage is passed, and squamation is reached, nothing in the form of a stimulant or irritant should be applied to an eczema. Hence the consideration of the stage of an eczema, in my eyes, has a most important significance. When the stage of squamation has finally set in, the disease may be termed chronic, and I then stimulate. Until that is reached, however, the disease should always be regarded as acute, and be soothed. Perhaps this is the lesson of all others to teach in the present attitude of dermatologists in their treatment of eczema. Further, when the stage of squamation has lasted some time, as before observed, one may have to treat chronic inflammatory thickening rather than eczema.

Lastly, as to complications. The very last condition referred to is one of them; the others are chiefly general conditions of a diathetic nature, or functional or organic disease of important organs, and these I shall note in detail in speaking of general treatment.

But I may appear to have said too little in a general way of the internal treatment in relation to variety and stage; I hasten to add, therefore, that it follows from what has been said that there is one general rule applicable to all cases of eczema, and that is, that one should attempt to conduct all cases of this disease to the scaly stage as soon as possible. To moderate excessive tissue-change in the skin, and allay the nerve irritation by general remedies in the early stage, is to aid in this object. But in eczema simplex no general treatment is requisite, save aperients and simple tonics. In eczema rubrum: dyspepsia, gouty tendencies, and the circulation of effete products in the blood must be remedied. But in the case of eczema impetiginodes, the pu -formation is not an evidence of intensity of inflammation, but of a pyogenic habit of body; and whilst I meet eczema rubrum associated with free pus-formation by salines, aperients, and the like, in the earliest stages, I *at once*, and from the outset, have recourse to cod-liver oil, iodine, iron, and the like, in the impetiginous variety, for these alone control the free formation of pus. I learnt this perhaps empirically, but I now see very clearly its reasonableness. It will be noticed how Willan's division of eczema helps in this matter.

ECZEMA SIMPLEX.

In entering upon details I shall speak of the acute stages first, and leave chronic eczema to be specially dealt with by-and-by. Let me first get rid of the treatment of eczema simplex: such as is produced by the action of external irritants—*e. g.*, heat, sand, flour, water, soda (as in washing), arnica, sulphur, &c. Here the disease is localized, and the treatment is practically local also. The familiar instance of the eczema induced in washerwomen and housewives who do much washing, by the action of soda, may serve as a type of this variety. It is true that the attacked are often debilitated and are therefore benefited by tonics, but, as the rule, the exclusion of air from the part, its removal from the influence of the irritant, and the application of some soothing or astringent remedy, cure the cases. The use of a lotion, perhaps, is preferable in the daytime, and it is best to apply the following:—An ounce of very finely levigated calamine powder, with two drachms of glycerine, half an ounce of oxide of zinc, and six ounces of water. This may be applied, after being well shaken up, by means of a sponge or camel's hair pencil, frequently (five or six times during the day), the powder being allowed to dry on. The air is in a great degree excluded by the powdery layer left upon the skin. I object to the ordinary calamine powder of the shops on account of the coarseness of its particles and its red colour. If there be much swelling, I prefer to use, in addition, some of the lead ointment of the old London Pharmacopœia or litharge ointment, thinly spread on rag, and closely applied at night, and kept on with a few turns of a bandage. (See Formulæ, No. 121.) If at the outset of the disease there be much pain, then poppy fomentations may be used before the ointment, and the first application of the lotion in the morning. An aperient or two, with the dilute mineral acids and bitters as a tonic internally, and some tarry preparation locally at the fag end of the attack, suffice to complete all that is needed for the treatment of eczema simplex.

No better opportunity will be afforded me to say that no powder of any kind should be used to the skin of an eczematous subject if it be gritty, or if its particles be large. Special care should be taken to use perfectly neutral ointments. The lead ointment I spoke of should be made fresh every few days. The benzoated zinc ointment is advantageous on account of its non-rancid qualities, for I am confident a great deal of harm is done by applying rancid unguents to the eruption of eczema. On the whole, ointments are best suited to the scaly, and lotions to the acute and discharging stages.

ECZEMA RUBRUM.

I now turn to the next clinical variety of eczema—eczema rubrum—in its acuter stages. There is a certain number of cases which seem to locate themselves on the border-land between this variety and eczema simplex. A typical case may be given as follows:—A man (or woman), aged forty or so, presents himself before the practitioner, and states that he is attacked by an eruption on the head and neck, which gives off a good deal of scurf. On inspection an eczema in the squamous stage is noticed, affecting the whole scalp, accompanied by a good deal of irritation and some slight redness. The eczema may extend down the neck, and there may be patches of the same kind about the arm, or the leg, or the thigh, and sometimes the trunk. The history does not give evidence that any marked inflammatory state has preceded, though the patient says the parts attacked were hot and red, and discharged before the scales formed. The only thing about the general health is debility. The patient has had an anxious time in regard to his duties or his family; has worked hard and has lived fairly; but somehow or other has lost tone and flesh. He is not up to his usual mark. He looks pale, languid, thin; and his assimilation is bad. Now alkaline baths, cod-liver oil, and the mineral acids, with tonics, ex. quinine, or, if there be much atonic dyspepsia and itching, strychnine: and, locally, the calamine lotion, and presently a weak tarry (oil of cade) unguent, or a mild mercurial ointment, have never failed in my hands to cure. But the mass of cases falling under this head are more inflammatory, and connected with definite derangements of the general system. Mistake is often made in applying the term eczema rubrum to an eczema which attacks the bends of the joints only. It should be appropriated to the disease according to its inflammatory character, and not its seat. It is at the same time true that eczema rubrum very frequently involves the flexures of the joints.

General Treatment.—I will suppose, however, that the practitioner has a well-marked case of eczema rubrum to treat, and I will speak of general remedies first of all. I am in the habit of teaching that he should search for one or more of the following conditions:—(1) an hereditary tendency; (2) the strumous diathesis and bad feeding in young life (well marked), and strumous taints (less marked), in the old; (3) simple debility; (4) chronic dyspepsia; (5) gout; (6) nervous depression connected with mental excitement; (7) deficient kidney-action, especially in old persons; (8) organic disease of the heart in the aged. The treatment must be adapted to meet all these conditions.

(1). Is the disease hereditary? Then a very carefully arranged plan of treatment, dietetic, hygienic, and medicinal, is needed; for here the eczema has a profound hold on the system.

(2). The strumous habit must be combated wherever it is met with; and, happily, success is certain if cod-liver oil, steel wine, and the like are persevered with. I will only add here, that wherever I find an eczema in old people in which the pus-formation is altogether out of relation to the degree of local inflammatory action, I am very careful to seek for a history of struma; and even in the oldest persons anti-strumous remedies greatly aid in the cure of the disease—at least I find it so. Senile struma is an important state to recognise.

(3). Simple debility is very frequently all that can be detected, even in those instances in which the disease is extensive and severe. It may be advisable, even under these circumstances, if there be much local heat, burning, or smarting, to commence with saline aperients, or even small doses of antimony with ammonia; but speedily one should have recourse to tonics. I know none better than the mineral acids with bark, or acids and iron, with aperients if need be (see Formula 159); but it is necessary, in order to get the full benefit of the acid, to increase the dose—say, of the dilute nitric acid, to thirty or forty drops in the dose. At the same time, cod-liver oil is even more useful in thin and spare subjects. Rest from over-work of body and mind, change of scene, good food, and a paucity of stimulants, are also most beneficial in these cases.

(4). Chronic dyspepsia is very frequently present as an aggravant of eczema, and it requires all the tact of the physician to remedy it. It is in these cases that alkalies occasionally do much good in connexion with bismuth, small doses of strychnine, iron, ferruginous waters, or the mineral acids, as the case may be. But the patient must also be carefully dieted. In those of good position the diet must be simplified, the plainest meats be taken, and stimulants avoided.

(5). Eczema often occurs in gouty subjects, and needs a good deal of care, for the gout is oftentimes in an undeveloped form. To use a common term, it "hangs about the patient." Now, so long as there is uric acid freely circulating throughout the system, so long will it be difficult to make a satisfactory progress with the eczema. If there be marked gouty symptoms, with loaded urine, the ordinary treatment for gout may be used with benefit; but in the so-called "suppressed" forms of gout the value of saline aperients, guaiacum, and iodide of potassium is incontestible. I think highly of such waters as those of Friedrichshall and Marienbad in such cases in the morning, so as to empty the gastro-intestinal canal freely. The addition of an equal volume of hot water increases their aperient action. Beer must be forbidden, together with sugar, pastry, and condiments.

(6). Nervous depression in connexion with mental distress or pure excitement is common as the general condition associated with eczema. The treatment is obvious—nervine tonics. Arsenic is often beneficial in these cases (see Formulæ 151 to 157); but quinine, bark, and acids, with the milder sedatives, are better. I quite agree with Dr. Fraser, that in those cases in which there is marked hyperæsthesia, or, to use more homely language, intolerable itching, strychnine (Formula 173) does much good. I am supposing that, under all the circumstances named, at the outset, when the inflammatory symptoms run high, salines and aperients are given first of all, in connexion with local remedies, to allay the inflammation. I also assume that anæmia is treated with its appropriate remedy.

(7). It is very important to attend to deficient kidney-action, especially in eczema rubrum of the legs, in old or oldish persons, and in the eczema of children. Some of the best results I have ever obtained have been by the use of diuretics freely given under these conditions, and I have no little faith in the employment of digitalis as one of the ingredients of the diuretic compound in adults. An eczema rubrum will often rapidly improve when the quantity of urine passed rises to a goodly amount from a scant quantity before. The local treatment is, however, of much importance in these cases.

(8). It has fallen to my lot to see a goodly number of cases of eczema—and general eczema too—show themselves as the first apparent evidence of a general break-up in old people; and in these cases I have oftentimes found a dilated and hypertrophied heart—not always, it is true; now and then dropsy has come on, or chronic bronchitis of an annoying kind. The general treatment consists, first of all, in remedies calculated to prevent or remove the effects of the heart mischief.

It will be noticed, then, that there are many different disorders of health which can be very definitely fixed upon as influencing the course of an eczema, and these must have each its appropriate remedies, used in connexion with ordinary anti-pyrexials in the earlier stages of eczema rubrum.

Purgatives I do not think have any special curative effect in the case of eczema; they merely aid the action of other remedies by clearing out the primæ viæ, and so give the liver and kidneys a better chance of eliminating effete products.

But supposing the acute stage to be passed, and the eczema to be getting chronic and scaly, arsenic is really of service in some cases, under such circumstances, if the disease is extensive and markedly scaly; if the patient is of a nervous temperament, and there are no decided secondary changes in the skin complicating the eczema. In those cases where the cellular tissue is involved, and there is a disposition to induration, I think alterative doses of bichloride of mercury and bark of infinite service; and here I agree with Dr. Fraser in regard to this treatment. I have now and then seen cases of eczema rubrum in a chronic state, in which there has been a remarkable puffiness, evidently œdematous, almost amounting, in fact, to a dropsical state of the skin, and this in young subjects. Here diuretics have benefited considerably, in alternation with cod-liver oil, iron, quinine, iodide of iron, and the like.

Local Treatment.—In regard to the local treatment of eczema rubrum, the lesson all need to learn is the avoidance of irritants. Suppose that the disease affects a large part of the body very severely, and that there are great heat and burning of the skin, what is to be done? Perfect rest must be enjoined, and the parts, if not freely discharging, are to be kept excluded from the air in some manner or other. It is not always an easy matter to say what will soothe in any particular case. Bran infusion, or decoction of marsh-mallow or poppy-heads, to which a little clarified size has been added, are very good applications to start with as lotions night and morning. The linimentum aquæ calcis is sometimes efficacious. After bathing the parts in either of these liquids (and care should be taken not to sodden the skin), two courses may be adopted—the one is to apply absorbent powders to exclude the air, the other to use the mildest neutral unguents. If there be any discharge, the former are the best, and equal parts of starch and oxide of zinc form an excellent powder for the purpose. Dr. Anderson gives a very good prescription of the kind, containing camphor in the proportion of half a drachm or so to an ounce. In the case of the poor, nothing is perhaps so convenient as ordinary whiting, made into a thinnish paste and applied with a brush. But, if powders (see Formulæ 77, 78) are used, they should be removed very carefully every twelve hours, and then poppy decoction or thin gruel may be applied for the purpose. When the surface is ceasing to discharge freely, or is not weeping so much, but is hot, stiff, glazy, and irritable, unguents are preferable; but these will disagree if at all rancid. The best I know is the compound lead ointment of the old London Pharmacopœia, or litharge ointment, (see Formula 121) which should be perfectly fresh, and never used if it be more than nine or ten days old. The application must be carefully made. The ointment should be spread on strips of old linen, and these are to be adapted closely to the affected surface. The patient, if the disease be general, should be packed in ointment, absolutely to exclude the air. The ointment must be renewed every ten or twelve hours. The benzoated oxide of zinc ointment is also good, but I have a preference for the other. Now, if the simple treatment above described agree, it should be steadily pursued for some time, until the heat, redness, and swelling subside. It may be well to prescribe, in addition to the above remedies, if the irritation is not relieved, an alkaline and gelatine bath each night. I have seen a great deal of harm done by the application of ointments containing mercurial compounds, in the inflammatory stage of eczema, and they should be avoided. When the sub-acute condition is reached, the time has come for the use of lotions, in addition to alkaline and gelatine baths. I prefer calamine and oxide of zinc lotion, about half an ounce or an ounce of each, with two drachms of glycerine and from six to eight ounces of rose or lime-water. The parts are bathed with thin gruel, and cleansed twice a day, and the lotion is applied with a piece of sponge or camel's-hair pencil very freely several times in the twenty-four hours. The compound lead ointment may be used at night if the lotion seem to be "too drying." In old people, where the skin is dry, red, and itchy, wet packing on a small scale at night, with dressings of Hebra's litharge ointment (see Formula 121), or the benzoated oxide of zinc, to which a small quantity of carbolic acid has been added, are serviceable. In these cases the water-dressing oftentimes gives great relief. But there is still one more point relative to acute eczema: it is the necessity for the removal of the crusts which form, and the prevention of their re-collection. Patients are most obstinate in dealing with this matter. It is most difficult to get them to understand that the remedies are required to be brought into contact with the surface beneath the crusts. The crusts should be removed by rubbing in oil or glycerine, or by poulticing. Once off, it is best, by the use of unguents, to prevent their re-formation. Even in the case of the scalp, the skin can be kept clean and free from crusts if a little trouble is taken in smearing the ointment fairly over it. It is proper to cleanse with warm water and white of egg once a day at least. I seldom use any other remedies than those already enumerated for the acute stages. In the transition between the acute and the chronic forms of disease, where there is a little weeping, lotions of calamine and oxide of zinc are still the things to which I trust. When, however, the discharge is ceasing, if the surface be indolent and semi-livid from congestion of the skin, especially if a whole leg or arm, for example, is affected, the best possible results are to be obtained by the careful application of diachylon spread on thinnish linen. Where the circulation remains languid, I sometimes use a solution of caustic in nitric ether. So much for acute eczema and its treatment by soothing remedies.

Now the moment the discharge feature lessens, the swelling goes, and squamation approaches, the disease is to be regarded as chronic; and I begin a very different and an active kind of remediation. As regards general remedies, antiphlogistics, active aperients, antimonials, and alkalies give place, unless there be any special indications for their continuance, to tonics, so-called specifics, and medicines for diathetic conditions. These I have referred to, but I must speak especially of the local treatment. For convenience sake, I divide the instances of chronic eczema which are to be treated into three groups:—The first class comprises those stages of eczema in which the disease is slight, the textural alteration is more or less superficial, and the scaliness is distinct, but in which there is no crusting. The second, in which the scaliness is also well marked, but in which there is a good deal of infiltration into the skin, with occasional weeping, and a tendency now and then to the formation of crusts. The third, in which there is considerable thickening of, and infiltration of serous or plastic matter into, the diseased surface, in which itching is marked, and the eczema assumes a papular aspect. Astringents and absorbents (see Formulæ 39, 40, 67, 75), do for the first class of cases—nothing else is needed; tarry compounds (Formulæ 83, 84, 107, *et seq.*), for the second, which approach psoriasis in aspect; and the so-called soap treatment (Formula 82), is best adapted for cases in the third group. The use of astringents—such as weak lotions of sulphate of zinc, alum, borax, and applications like glyceral tannin—often suffice to complete the cure of chronic eczema where the affection is mild; but experience shows that mercurial preparations are equally efficacious, and custom has given them preference in such cases. I use generally the nitric oxide of mercury ointment, or one composed of five grains of the white precipitate to the ounce, or citrine ointment diluted with five or six parts of adeps, with or without oxide of zinc, to slight scaly eczema of the scalp, the face, the legs, ears, and other parts. Occasionally a weak solution of nitrate of silver has seemed to me to do wonders. I cannot say that I like sulphur, having seen so many cases aggravated by its most injudicious use. Where the eczema approaches in aspect to psoriasis, recourse may be had to the aid of tarry preparations, with excellent results, because all that is needed is to rouse the skin by stimulation to healthy action, and tarry preparations are admirable stimulants. It is no bar to the use of tarry compounds that itching is present, but rather the reverse. I do not say that tarry preparations are not of service in other forms of eczema, but *par excellence* are they beneficial in their action in the quasi-psoriatic eczemata. But it is not always a matter of certainty to say whether tarry compounds will agree well with an eczema. To a certain extent one must be guided by experiment. This I may say, that in those instances in which there is much dry scaliness, accompanied by obstinate itching and the formation of true papules, they should be tried. I confess that I have a preference for the pyroligneous oil of juniper over all other similar preparations, and use it in the proportion of one to four drachms to the ounce of adeps. The liquor carbonis detergens and oleum fagi, however, are good. I do not find myself so firm a believer as some in the virtues of carbolic acid as a panacea for all skin affections. Tarry preparations must be applied to the real diseased surface; that is to say, we must by water-dressing or greasing, get away all scales and scabs from eczematous patches before using the remedy. Now, it is acknowledged on all hands, as indicated before, that tarry compounds disagree with many cases in which *à priori* they would be thought to agree, and I have seen eczema often aggravated, and even tar acne induced. I have said they are most efficacious in the papular aspect of eczema, but I stated in speaking of the characters of eczema that dermatologists had not made proper distinction between the true papules of eczema, and erected and congested follicles; and this brings me to notice one point upon which I lay great stress in the treatment of eczema. Whenever there is a papulation around an eczema which has been much inflamed, it will generally be found that the follicles are irritated and congested. A careful examination will very soon tell if this supposition be true. If so, I conclude that there is considerable perversion of the innervation of the integuments; that the skin is very irritable, in fact; that any stimulant treatment is sure to do harm; and that, notwithstanding the eczema-patch itself is dry and scaly, the treatment must differ essentially from that adopted in similar cases, because of the indication afforded by the follicular congestion. In these cases the strapping with diachylon acts admirably. I believe that it is from the circumstance that tarry compounds have been used without distinction as to the diverse nature of the cases which make up papular eczema, that uncertainty exists as to their action. If we recognise the difference between true papular eczema and the condition induced by follicular congestion, we shall be much more cautious in our use of tar for the future. We must be specially careful in our use of tar in cases of eczema rubrum, and should abandon it if it increase rather than allay the itching, if it augment or induce any discharge, or lead to swelling or redness of the skin.

In the case of eczema affecting the fingers and toes, where there is no little pain and heat, with fissuring, it is a good plan to soften up the parts with some simple ointment—the benzoated oxide of zinc—and then to dress the parts carefully with diachylon plaster cut up into strips and adapted to the surface. If the cracks are very severe, the application of nitric acid will be decidedly beneficial. Where there is much thickening, the soap treatment, to be described directly, should be had recourse to.

Thus far I have spoken of the simplest chronic eczemas in their scaly stage : and of those instances of chronic eczema arising out of eczema rubrum especially, in which there is slight infiltration, and therefore some thickening, and also squamation; but there is yet the treatment of the third form of chronic eczema to notice. The cases to which I now refer are all those in which, as I have said before, the results of chronic inflammation replace, as it were, the eczema. As a consequence of the antecedent inflammation we have infiltration of plastic or serous material into the tissues of the affected part, with induration, hypertrophy of the cellular tissue, warty papillary growths, and the like, culminating in false elephantiasis (Arabum), or more properly bucnemia. In the less severe cases, blistering and the soap treatment are the two chief means of cure; and I particularly wish to urge practitioners to use the latter more frequently in such cases as those, to which I now refer. Some dermatologists use potassa fusa, iodide of mercury, or iodine, to cases of chronic eczema with much thickening. But I do not recommend these; and we must remember that we may lose our patient very readily if we use too violent measures. I do not, for this reason, very much like blistering. Mr. Gay tells me, however, that in his hands it has proved most beneficial; and he is not singular, I am aware, in this experience.

As I have said before, the soap treatment is the one I prefer in the general run of cases. Hebra has done essential service to therapeutics in bringing this mode of cure so prominently before the notice of the profession. The way to use the soap is as follows: take a small portion of soft soap, and rub it freely into the thickened patch by the aid of a piece of flannel, wetting the latter from time to time, as Hebra says, to make a lather. When distinct soreness is felt, the inunction should be stopped, and the part wiped fairly dry. The part is then to be very carefully covered with some mild ointment spread on linen, and in such a way that air is entirely excluded. The best is the litharge ointment of Hebra. The application of soap and unguent should be made twice a day. After a day or so the patch softens up, but exhibits small red points, which may vesiculate; the treatment is to be continued until these latter disappear. The practitioner will notice by the cessation of itching, and the general smoothing of the patch, when improvement is in progress. Of course this plan of treatment can only be used to really chronic eczema. We are accustomed to see thickening of eczematous patches mostly about the leg. The soap treatment, with bandaging, and the exhibition of iodide of potassium, or mercurials, internally, with diuretics if needed, do certainly work very remarkable cures, as the rule. Rest may be required, and firm strapping, in the cases of false elephantiasis.

ECZEMA IMPETIGINODES.

Nothing has been said as yet relative to the management of eczema impetiginodes. Of course, in those cases where the pus-formation is accounted for by the intensity of the inflammatory action, antiphlogistics, salines, and aperients are required at the outset, with the ordinary local treatment suited to eczema rubrum. But this is not the case where the pus-formation is out of all proportion to the local inflammatory action, where it is clearly due to the existence of a well-marked pyogenic habit of body; and this applies as well to the case of the infant as the old man. Here, a building-up instead of a pulling-down plan of treatment is called for. In true eczema impetiginodes, the diminution in the pus-formation is to be brought about by the use of general remedies—cod-liver oil, steel, quinine, good food, fresh air, and the like. I press upon the attention of the reader this point respecting the relation between the pus-formation, and the degree of inflammation on the one hand, and the existence of the strumous diathesis on the other. The local treatment of impetiginous eczema is, in the early stages, that of eczema rubrum entirely. At the outset, and in direct proportion to the degree of irritation present, our remedies must be of an emollient nature. Poulticing or fomenting with decoction of poppy-heads, to remove the crusts and allay inflammation, is the first step. Weak lead or borax lotion may then be used, and subsequently an ointment made of a drachm of the nitrate of mercury, or three grains of the ammonio-chloride to an ounce of lard. If the scalp is affected, the hair must be cut from around the disease. Pediculi are to be destroyed by the white precipitate ointment, chloroform vapour, or a pyrethrum roseum, or stavesacre ointment. I prefer the former of these. In many cases alkaline lotions are of use—ex. gr., carbonate of soda (sixty grains to six ounces of water). In the later stages I never get beyond the use of the simplest astringents or weak white precipitate ointment, because all active stimulants and irritants reproduce or increase the pus-formation. In impetigo scabida other steps must be taken; the general health must be regarded from a gouty, a rheumatic, or a latent strumous point of view, and treated accordingly—the kidneys especially made to act well. The diet should be good and unstimulating. Then locally, the scabs are to be removed by repeated soaking in glycerine lotion, and by poulticing, and the denuded surfaces may be treated with lead lotion, tannin, and glycerine at first, and then the white precipitate ointment, or one composed of pyroligneous oil of juniper two drachms, and sulphur ten or twelve grains, to an ounce and a half of lard. Finally, painting with nitrate of silver solution will heal the surface: and if the limb is affected, and the skin is much swollen, careful bandaging must be resorted to. In impetigo of the beard hot fomentation, the exclusion of air as much as possible, a course of iron with acids and sulphate of magnesia, and locally alkaline washes, then glyceral tannin, sulphate of zinc lotion, and the nitric oxide of mercury ointment, generally suffice. In eczema infantile, what is needed besides is attention to the diet; which should be good, and regularly given; such things as corn-flour made up with water are to be condemned, and good milk, with Robb's biscuits, substituted, at the rate of two pints of the former per diem for the young, if the mother is weak and cannot nurse or is unfit for nursing. If any teeth are through, good broth may be given once a day. Then the secretions, if pale and unhealthy, should be rectified; and if the child is pale, steel wine given. I do not much care for arsenic, but it is fashionable, and it does good in scaly eczema. As I said before, a weak ammonio-chloride of mercury ointment is the best local application in the more chronic stages.

I have thus laid down the principles upon which we should, as I think, conduct the treatment of eczema.

As regards mineral waters, I will simply say that dyspeptics may take Marienbad and Karlsbad, or Vals. Anæmics: Pyrmont, Franzensbad, or Tunbridge Wells. Gouty subjects: Vals or Lithia water.

For special internal remedies, see selected Formulæ, Nos. 151, 152, 153, 154, 180, 182, &c.

CHAPTER XI.

BULLOUS DISEASES AND ANOMALOUS FORMS OF BULLOUS ERUPTION.

Under this head I include the diseases which are especially characterized by the occurrence of bullæ as primary and essential phenomena. Willan described a bulla or bleb as "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid." In fact a bulla is a large vesicle (see p. 32). In the wide sense of the term several diseases are really bullous, such as erysipelas, herpes, pemphigus, rupia, eczema of the fingers, and impetigo contagiosa. But of these there are only two that really rank under the term bullous—*i.e.*, herpes and pemphigus. Erysipelas belongs to the class of zymotic diseases; rupia is always syphilitic, and of course it is grouped under that head; the bulla produced by the coalescence of vesicles in eczema is an accidental and secondary phenomenon; and in impetigo contagiosa, the primary stage is a vesicle and not a bulla, the secretion subsequently becoming sero-purulent, whilst the general behaviour and outward aspect of the disease are those of an impetigo. Besides, herpes and pemphigus are peculiar and alike in regard to the influence of the nervous system in their production. Therefore, true bullous diseases, or those which are probably of neurotic origin, and in which the bullæ are primary, with transparent contents, are herpes and pemphigus.

I might have placed these two diseases—herpes and pemphigus—under the head of neurotic diseases, but then I must have included many others, such as urticaria, pityriasis rubra, &c., with them, if I carried out the idea of collecting together under one head all those diseases which primarily originate in disturbance of the nervous system, and arranged them upon a pathological basis. As I have classified diseases, however, "clinically," I place herpes and pemphigus under the convenient but most unscientific term, "bullous inflammation," because it is to changes implied by that term that the practitioner first directs his attention in the matter of diagnosis and treatment.

Some anomalous forms of eruption will be noticed at the latter part of this chapter.

The French, as is well known, are exceedingly fond of assuming the existence of a special diathesis in connexion with which herpetic eruptions are said to occur. The term *herpetism* has been coined to designate this general condition, the existence of which I of course wholly deny. Those, however, who wish to make themselves acquainted with French notions should consult a work of some 468 pages by M. le Dr. L. Gigot-Suard.* This gentleman seems to make herpetism include everything—erythema, prurigo, urticaria, psoriasis, lichen, acne, furuncle, herpes, eczema, ecthyma, hyperæsthesia, &c. &c. His definition is as follows: "Maladie constitutionnelle, chronique, héréditaire, ou acquise, non-contagieuse, continue ou intermittente, caractérisée par des manifestations variées qui se produisent simultanément ou altérativément sur la peau et divers systèmes organiques, lesquelles manifestations ont pour cause directe la présence en excès de principes excrémentitiels dans le sang, notamment de ceux qui s'y trouvent en très petite quantité à l'état normal, et qui ne sont pas excrétés par la peau, tels que les urates, les oxalates, les hippurates, la xanthine, la créatine, &c." It will be at once evident that conditions of blood impurification that may act as exciting causes or aggravants of skin eruptions are magnified into *veræ causæ* in the attempted establishment of a special herpetic diathesis.

HERPES.

This disease is characterized by the presence of vesicles larger than those of eczema, distinct from each other, and invariably seated upon an inflamed base; these large vesicles, which are chambered, may be regarded as small bullæ. They are generally tolerably few in each separate collection of vesicles: they do not rupture, as the rule: but their contents, which are alkaline or neutral when clear, and slightly acid when turbid, after becoming opaque, disappear by resorption, but now and then by rupture and desiccation into light brownish scabs. The vesicles last about seven or eight days. The disease is mostly accompanied by sensations of heat, tension, and burning, which indeed are felt to a greater or less extent before the appearance of the eruption; occasionally severe neuralgic pains occur before, together with, or after the eruptive stage. This is particularly the case in what is called herpes zoster or shingles.

It is usual to make several varieties of herpes, but I think it only necessary to particularize the variety called herpes zoster, or *shingles*. It is of some importance, however, to distinguish between herpes which is the sole disease present and herpes occurring as part of—in the course of—general pyrexial diseases, as in the case of fevers and the exanthemata, rheumatism, &c. In the latter case the mucous membrane of the throat, mouth, or palate may be attacked as well as the skin.

Herpes, when it exists as the sole disease, may be general or local. There seems to be little doubt that very occasionally herpes may be pretty general, and apparently without being a mere complication of diseases. Dr. H. Coutagne, of Lyons,* particularly, has recorded a certain number of cases of "acute general herpes," which he thinks show that herpes may run the course of an exanthematous fever. The disease begins as a pyrexial disorder, with fever, headache, malaise, and the like, followed by the outbreak of a copious eruption about the face, limbs, and trunk, and what is curious, particularly about the penis and the scrotum, and also in the throat, which is rendered painful. The disease lasts ten days or more and may relapse, but is unattended by sequelæ. It may be confounded with acute eczema, pemphigus, the erythemata, miliaria, syphilis, and hydroa. Of course this form of general herpes is very rare, and may be after all only a consequence—*i.e.*, symptomatic of some specific febrile disturbance, or it may be the result of severe catarrh only.

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* L'Herpetism; Pathogénie, Manifestations, Traitement, &c. Paris, Baillière et Fils. 1870.

The localized forms of *herpes* however are the only forms of any frequency. They only differ in seat, and in the mode of arrangement and number of the collections of vesicles. I will briefly describe them for the student's sake.

Herpes in its ordinary local form is observed in many parts commencing by a sense of heat and itching, with some erythema, upon which arise round grouped vesicles, from ten to twenty, in patches the size of sixpence to a five-shilling piece, surrounded by a red areola; there are generally several of these patches; they mostly occur about the face, arms, neck, and upper limbs. The contents of the vesicles, at first transparent, become milky, then quickly disappear; the vesicles shrivel, and scabs remain; the smarting heat and tension also subside; the disease lasts ten days or more; the vesicles arrive at their height of development in two or three days, and dry up on the seventh or eighth.

Herpes labialis, named from the disease attacking the lips, commences as a "cold," with pyrexia, &c.; then the local heat, smarting, and tension are followed by a patch of herpes, with about six or eight vesicles.

H. præputialis is not uncommon; the patch scales over in a week or so; the scabs fall off, leaving little ulcers the size of pins' heads or more, which quickly heal, the prepuce being irritable and red. There is a syphilitic herpes. In it there are successive crops of vesicles, but the prepuce gets hard and indurated about the seat of the herpes, coition being painful. The mucous surface is more or less irritable, and the origin from bullulæ clear; but the bullæ give place to little ulcerations, which are close together, and quickly scab over; in other cases, the vesicles abort, desiccate, and scale over; the little crusts fall off, leaving little pits, which presently heal (see Syphilis).

H. zoster, *zona*, or *shingles*,† possesses the characters of ordinary herpes, but derives its special name from the peculiar manner in which the groups of vesicles tend to encircle one-half of the body like a girdle. It follows the course of one or more of the cutaneous nerves, generally stopping short at the median line before and behind, though it may cross this point, and in this matter the experiences of Hebra, Wilson, Startin, Hutchinson, and myself agree. It generally affects the trunk, but may attack the face, the shoulder, the belly, or upper part of the thigh; the right side is more frequently attacked than the left. Of 178 cases collected by Barensprung, in 101 the zoster was on the right side. It may attack both sides at one and the same time, but this is very rare, and when this form of zoster occurs it is not unlikely to be syphilitic, but I have seen unilateral syphilitic herpes. The disease is most common in the young; it is of about equal frequency in the two sexes, and occurs particularly during change of weather. It seems on some rare occasions to be almost epidemic. Zoster is an acute disease, of definite duration, lasting from fourteen to twenty days. The patient often ails a few days before the eruption appears, is feverish, out of sorts, complains of headache, shivering, perhaps pain in the side, which may be very acute and of neuralgic aspect; presently patches of erythema appear, and present, on close examination, a number of little white points, which quickly enlarge into bullulæ, perhaps coalescing and forming distinct bullæ; the vesicles are tense, and contain clear serosity; in four or five days they become partially emptied and flaccid, the contents becoming turbid and dark; at the same time the red blush fades, and the patch scabs over; the crusts disappear in ten days or so, leaving dark red stains. The changes are not completed at the same time over the whole area of the patch, but are later in taking place in one part than another—consequently, several aspects or stages may be noticed in different parts of the same subject. In some rare cases, the H. zoster may ulcerate, or even become gangrenous. Pain may be a very prominent symptom; it may be lancinating, smarting, or burning. The convalescence finds the patient weak and neuralgic. The scars are not lost for some time. The disease rarely occurs twice in a lifetime, but I have known it occur a third time. It is usual to make certain varieties of zona or shingles. Roughly stated, they are Z. capitis, faciei, nuchæ, brachialis, pectoralis, abdominalis, and femoralis. It is as well to know that the eruption follows the course of distribution of certain nerves: the trigeminal in H. facialis, the labial branch in H. labialis, &c. &c. When the limbs are attacked, and this is the case now and then, the line of eruption corresponds to that of the long axis of the limb; in other words, the eruption does not encircle the limb. A want of knowledge in this respect I have known to mislead observers.

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* De l'Herpès Généralisé Fébrile. Paris, 1871.

† See paper by Mr. Hutchinson: London Hosp. Reports, vol. iii. 1866. See also Sydenham Soc. Year Book for 1867.

Now on comparing the above forms of herpes, one finds that they are not different, save in seat and extent. The herpes of the nose, mouth, and ear, are identical. At one time it was customary to divide herpes into two kinds: the one (typical) including the varieties above described being called H. phlyctenodes, the other, including two sub-varieties, *herpes iris* and *herpes circinatus*, being ranked under a group designated *circinate*. But this division is wholly unnecessary. Occasionally the patches of herpes may be peculiarly circular, and then the term herpes circinatus may be applied to it, though this refinement of nomenclature I discard.

Herpes circinatus however was formerly the term applied to ringworm of the surface (*tinea circinata*) because of the presence of quasi vesicles or papules which formed in many cases at the circumference of the patch. But the disease commences as a red scurfy spot, enlarging gradually in circumference, the central part becoming paler and scaly: and it is likewise indefinitely prolonged unless properly treated. I have seen tinea circinata develop rapidly as a largish patch, with well-developed vesicles, and then look very much like herpes phlyctenodes; but in all these cases the origin from a small red, itchy, scurfy spot, the papulation or vesiculation of the extending edge only after a while, the clearing of the centre, and the slight desquamation should at once decide the nature of the disease. The microscope should be used if there is a suspicion of parasite, and in any circular eruption which has a furfuraceous desquamating centre. The disease, as before stated too, lacks altogether the definiteness as to outset and duration of true herpes. The cause of tinea circinata is the growth and irritation of a fungus, and it is easy to see that the aspect of the disease will vary with the luxuriance of the parasite and the condition of health of the attacked. I hope the name tinea circinata will be given to this ringworm of the surface, and it will not in future be confounded with herpes, with which it has only a similarity in external appearance.

Herpes iris.—This variety commences as a solitary vesicle on an inflamed base, and subsequently in some cases new vesicles spring up around the primary one, in the form of a ring. The vesicles may run together into large bullæ. In its more perfect form then it consists of a herpetic circular patch made up of concentric rings, there being generally a distinct vesicle in the centre. The different rings are of various hues, hence the term iris. It mostly occurs on the back of the hand in elderly people. It lasts six or seven weeks, and is apt to reappear in the same person.

Herpes impetiginiformis.—Under this term Hebra has described a rare form of disease. The following notes of a recent case under Hebra's care were given in the *Lancet* of March 23rd, 1872:—

> "At the beginning of June, 1871, a woman twenty-five years old, and in the ninth month of pregnancy, was admitted into Professor Hebra's small-pox ward, under the supposition that she was suffering from varioloid. She had been ailing for three weeks, but her illness had only taken an acute course a few days previously. It began with lassitude and loss of appetite; she soon became so weak

as to be unable to leave her bed, and had fever and repeated rigors. It was soon found that her disease was not small-pox, and she was transferred to a ward for general skin affections. At this time the character of the eruption was clearly marked. At the root of the neck, on the front of the chest over the sternum, and around and between the mammæ, groups of small vesicles had formed on an inflamed base. The vesicles had enlarged; their contents became cloudy and yellowish; a number of vesicles had coalesced, and, bursting, had formed brownish yellow and adherent crusts. The skin around the vesicles was intensely inflamed. The eruption had first appeared on the external genitals. The labia majora, mons veneris, and the neighbouring skin of the abdomen and inner part of the thighs were, on the date of the patient's transference to another ward, covered with large yellowish crusts, and vesicles in various stages of development.

"In the course of the following week groups of similar vesicles appeared on the face, over the whole chest and abdomen, on the arms (where the patient complained especially of severe pain), and on the front of the thighs and legs. Thus rather more than a fortnight after admission the eruption had reached its height, and the front of the body was almost entirely covered with yellowish crusts; these began to dry up and exfoliate, first at the root of the neck, without the occurrence of ulceration and loss of substance.

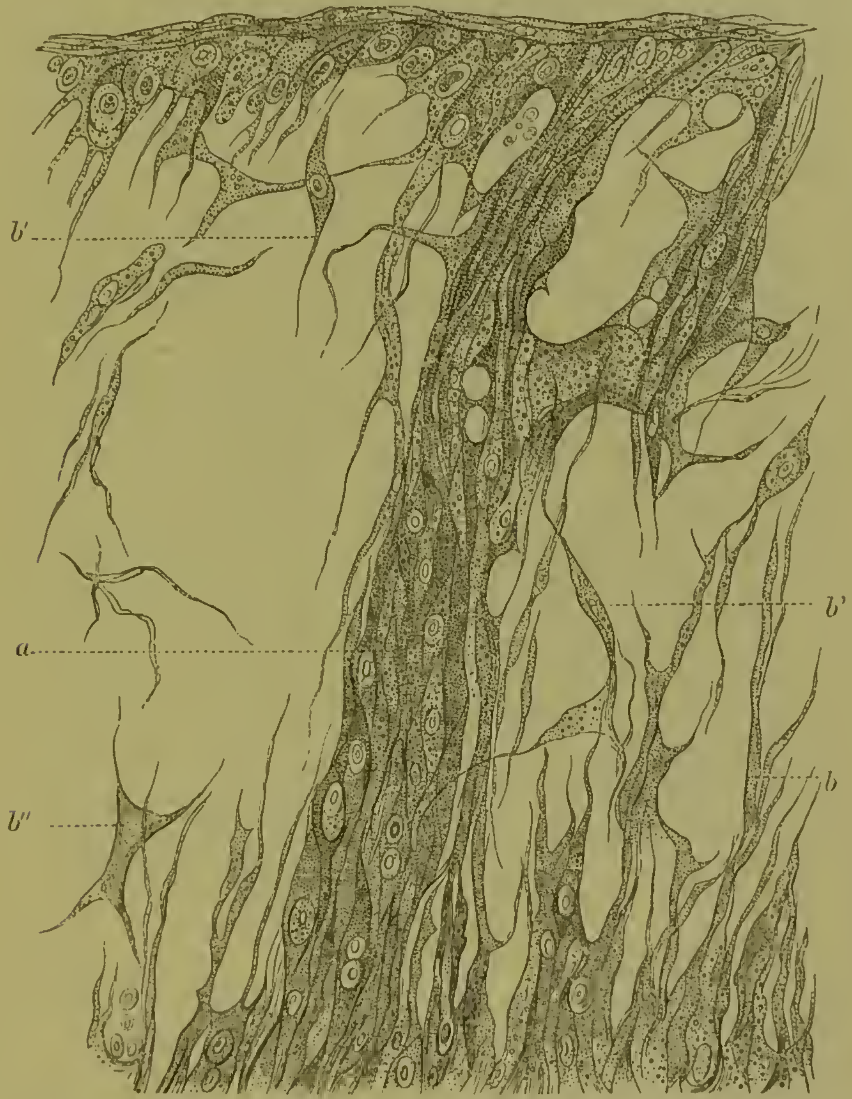
"At this time were found near the ankles several large bullæ, containing slightly cloudy fluid, resembling those of pemphigus. The patient, who had some days previously complained of 'cold along the back,' and had a pulse of 96, began to feel warmer; her pulse was found to be 92. She had repeated rigors, and was so weak that she could not raise herself in bed. No observations were made of her temperature. Her treatment throughout was mainly expectant; she was allowed chicken and wine, and anything she fancied. For the pyæmic symptoms she took quinine, and a lotion composed of six grains of perchloride of mercury and one pint of lime-water was applied to the genitals. As the pain prevented her sleeping she was ordered half-drachm doses of chloral hydrate at night. On June 15th, Professor Hebra had, as an experiment, her left leg bandaged with strips of diachylon plaster, but without any striking result.

"On June 17th the patient was safely delivered of a healthy child. This was her second pregnancy; in the first she miscarried. On the 19th she was going on well, was cheerful, and the lochia was normal. The eruption was scaling round the neck. On July 5th she had a slight attack of hospital dysentery, and was treated with tincture of perchloride of iron in fifteen-minim doses three times a day, and with dilute sulphuric acid. At this time she had no sign of any fresh eruption and was scaling rapidly. On July 25th, when the last note was taken, she was almost convalescent; her face (which was the part least affected) was quite normal, as also her chest, and the remainder of her body was rapidly becoming free from scales.

"In some remarks upon this case, Professor Hebra said, that, in his very considerable experience, he had only as yet seen five such cases, of which this was the fifth. They all occurred in women at full time except one, which took place during the course of pregnancy; the first four all terminated fatally. They all resembled one another in beginning in the region of the genitals; in their general diffusion over the body in a later stage; and in the herpetic character (groups of vesicles on the same inflamed base) which they presented. They were all accompanied by fever and rigors. The disease might be called "herpes impetiginiformis" from the appearance of the crusts. There was no restriction to the course of certain nerves as in an ordinary zoster. Finally, it was a most dangerous disease."

Morbid Anatomy and Pathology.—The changes which take place in the skin in the formation of the groups of vesicles in herpes zoster have been defined with much exactness by Biesiadecki and Haight. The observations of these gentlemen have been noticed more or less completely in speaking of vesicles under the head of elementary lesions. The normal papillæ are enlarged by serous infiltration and by the presence of exudation corpuscles. The fusiform cells and connective-tissue corpuscles are increased in size and amount, and are found not only in the papillary layer, but also in the rete mucosum. In the papillary layer the fusiform cells elongate so as to form a network, in the interstices of which, cells lie. The result of this increase of cell-growth and serous exudation into the rete is to put the cells of the *rete* on the stretch, or to push them aside, so that loculi are formed, having for their roof flattened-out cells of the cuticle, and for boundaries and partitions, the cells of the rete elongated into fibres.

FIG. 17.

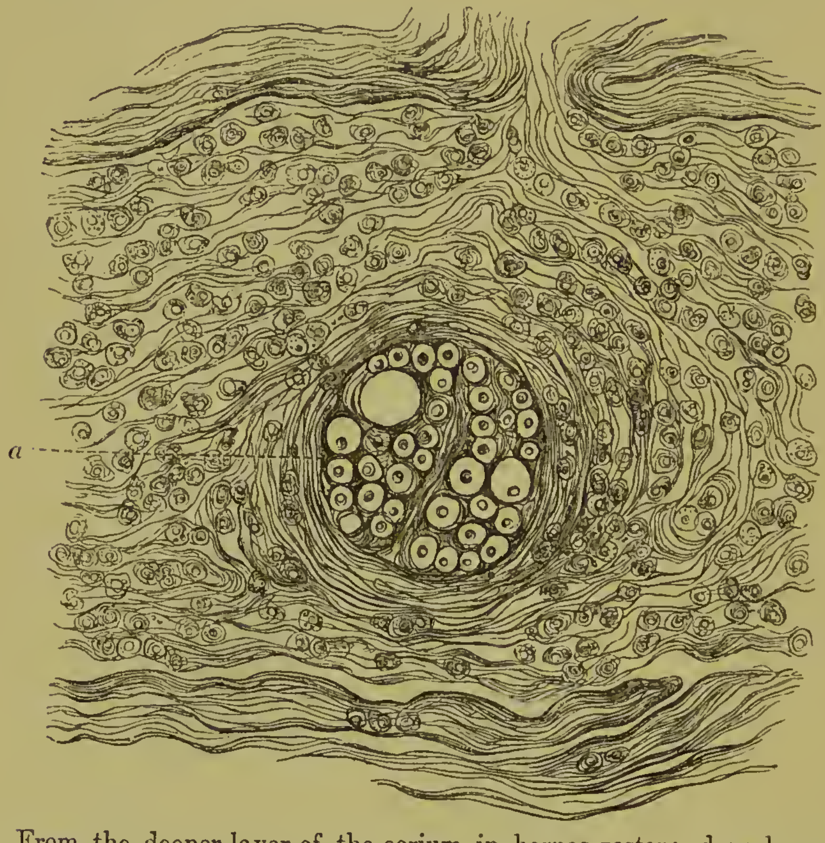


Bulla of Herpes Zoster (after *Haight.* Sitzungsb. der k. Akad., 1868). *a.* Thick strand formed of elongated spindle-shaped epithelial cells. *b.* Meshwork consisting of spindle-shaped cells. *b'*, *b''* cells with several prolongations. (Diam. 450).

And according to Biesiadecki the latter are formed also by the fusiform cells. The thicker bands of the meshes run from the horny layer of the cuticle to the interpapillary part of the corium, which is covered by a thin layer of pressed rete cells. The main network of the vesicle is portrayed as above by Dr. Haight. When pus forms the pus-corpuscles lie in the meshes of the network already described. The source of the pus-cells is supposed by some to be the epithelium, by others the connective-tissue corpuscles, by others the white blood-cells. The vessels in the papillæ are enlarged and dilated. But the most interesting facts remain to be noticed—viz., that there is distinct morbid change to be noticed in the nerve trunks underlying and in connexion with the seat of eruption, and also changes about the roots of the spinal nerves.

As regards changes in the nerves at the seat of eruption it seems clear that the nerve is swollen, and the neurilemma filled with small round nucleated cells of the character of pus-cells; the medullary substance is also softened and the axis cylinder "eccentrically enlarged." The accompanying figure illustrating this state of things is Dr. Haight's* (fig. 18).

Fig. 18.



From the deeper layer of the corium in herpes zoster; densely compressed cellular tissue. *a.* Transverse section of a nerve with enlarged fibres, axis cylinder displaced; loose cellular tissue around nerve interspersed with pus-cells.

But further than this it would seem that morbid changes are to be detected about the origin of the spinal nerves. Clinically two facts are certainly presented to the physician's attention, especially in zoster:—1. The constant occurrence of neuralgic symptoms prior to the development of herpes, and of such a distribution and character as to lead to the supposition that its cause must be seated not in the skin, but near the spine. Some of the most intense cases of "pleurodynia" are connected with zoster, whilst the pain is speedily relieved by the outbreak of eruption. 2. The second fact is, the exact correspondence as to site of herpetic eruption with portions of the surface supplied by certain branches of nerves, whose main trunk far off from the seat of eruption must be disordered. Zoster of the chest will make its appearance frequently in the part supplied by the posterior cutaneous branches of the intercostal nerves, then in that furnished by the anterior, and so on. A striking case is that recorded by Mr. Paget, in which herpes affected the parts supplied by the infra-orbital, the anterior dental, and the anterior palatine branches of the superior maxillary nerve. After catching cold, the patient was attacked on the third day with herpes of the cheek, side of nose, the upper lip, the palate, and buccal membrane. The final results were in some respects remarkable, and in keeping with the explanation as to the implication of the main nerve trunk. A bicuspid fell out on the sixth day, a second on the seventh, and later still the canine and two incisors, whilst the alveolus in part necrosed. In the herpes ophthalmicus, so fully referred to by Mr. Hutchinson, the same truth has been illustrated in a very remarkable way. But it is well known that Barensprung, who has investigated this matter very closely, gives as the essential cause of zoster, not disease of the actual nerve trunk, but inflammation of the sympathetic fibres of the spinal ganglia, which affects the tissues through the nutritive (trophic) nerves that arise from those ganglia; others regard the eruption as due to simple vaso-motor nerve disorder; but as there is actual formation of new products in herpes, Barensprung's views prevail. That the nerves determine the seat, and are the the agents that excite the eruption is unquestionable. In a very suggestive paper by M. Prouct* he mentions that in one case of zoster under Barensprung's care, the spinal cord with the roots of the spinal nerves were found to be free from disease, but on opening the intervertebral foramina the sixth, seventh, and eighth intercostal nerves were found to be enlarged and reddened for the space of an inch, owing to the presence of large and tortuous vessels which traversed the neurilemma. The seventh, which was the nerve principally affected, was half as large again as the fifth or ninth. A similar case has been reported by M. Charcot, only that in this instance the spinal ganglia were red and swollen in addition to the other lesions.

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* Loc. citato.

Recently Wyss has made similar observations in the body of a patient of Von Witte's, of Rheinau, suffering from herpes. "The patient was sixty-eight years of age, and on September 16th he had headache and febrile symptoms. On the 19th scattered vesicles appeared of herpes labialis. On the 20th the right side of the forehead, and nose and cheek as far as to the border of the lower jaw, were injected. On the 22nd the right eye itself was inflamed, and on the 23rd the left. Two days afterwards an eruption of herpes appeared on the right side of the face, which affected the cornea and conjunctiva. On the 28th the patient died. The post-mortem examination was conducted with great care. The herpetic vesicles and scabs were very accurately limited to the right side, and to the parts supplied by the first branch of the right trigeminal nerve. The left eye was perfectly normal. The nerve above mentioned was found to be broader and thicker than that of the left side, of a deeper grey-red colour, of softer consistence, and with the several nerve fasciculi separated by greyish-red soft tissue, containing many vessels. This alteration in its character extended from the point where it entered the orbit to the finest branches as far as they could be traced with the simple lens. The other nerves traversing the orbit were perfectly healthy. Outside the orbit and extending from it to the ganglion Gasseri, the first branch of the fifth was surrounded by extravasated blood. On the proximal side of the ganglion Gasserianum the fifth nerve was normal in appearance. The ganglion itself was larger and somewhat more succulent than the left; upon its inner side was a red mass that appeared to be caused by an ecchymosis. The proper substance of the ganglion was not of a yellowish-white colour, but bright red. The fifth nerve was healthy at its apparent origin from the brain, where it entered into the Gasserian ganglion. There were numerous ecchymoses. These were especially visible also in that part of the ganglion whence the first branch of the fifth arises, whilst that from which the second and third branches arise was little altered." (*Centralblatt*, No. 7.)

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* Archives de Médecine.

This case of course bears out Barensprung's theory that zoster is the result of inflammation of the spinal ganglia and the nerves passing through them.

Gerhardt observes that the group of diseases in which zoster of the face occurs is remarkable "by the frequency of an initial rigor or the occurrence of an increase of temperature even to 32 degrees Réaumur, on the first day." He thinks that the irritation must be caused by the following peculiarity of the fifth nerve: "The branches run through narrow bony canals along with small arteries: these arteries contract in the initial rigor, but then *dilate*, and their abnormal size creates a pressure on the branches of the trigeminus and the sympathetic. The occasional result is the occurrence of a vesicular eruption. When this has once occurred an accommodation takes place in virtue of which a second attack of febrile dilatation of the vessels does not irritate the vaso-motor fibres so as to cause an eruption." It is curious that in intermittent fever herpes only occurs once, and as is held generally between the second and third fit. Be the value of Gerhardt's observation what it may, it possesses a certain amount of interest in connexion with the minute observations made by Barensprung, Wyss, and others.

The pain of herpes zoster is supposed by Barensprung to be due to the reflection of irritation from the ganglia along the corresponding posterior nerves. In a very suggestive communication made to the *Journal of Cutaneous Medicine*, Dr. Woakes* remarks that "owing to the suspension of the regulating power exercised mainly by the sympathetic nerves over a given artery, effusion of fluid takes place from its ultimate ramifications; these being distributed to the skin on the one hand, and to the texture of the sensory nerves on the other, the effusion so caused produces the herpetic rash in the former, and the pain from mechanical pressure in the latter;" that is to say, the alteration in the calibre, &c., of the vasa nervorum, accounts for the pain. However, as I said before, the formation of new products seems to me necessarily to signify the distinct disorder of the trophic nerves in herpes, unless it be admitted that the new cell elements are produced from escaped white blood cells.

The above considerations lead me to the enumeration of the exciting causes of the nerve irritation. In symptomatic herpes—ex., herpes occurring in fevers, ague, pneumonia, and in catarrh, it is not difficult to understand that disorder of the ganglia may occur. It is not difficult to understand the development of herpes after the passage of a catheter, or other irritation of the mucous membrane of the urethra; but it is perhaps less easy to give an explanation of the occurrence of herpes after the action of an irritant upon the surface, as in exposure to cold, except by admitting Barensprung's theory, and supposing that the sensitive nerves transmit impressions to the spinal ganglia, which subsequently influence the vasa-motor or trophic nerves going to the seat of the herpetic eruption. It is also easy to see that emotional disturbance or mental distress, may play an important part in the causation of herpes. But the typical mode of production is seen in labial herpes, where irritation of the mucous membrane of the air-passages is reflected upon the nerves going to the lip, giving rise to hyperæmia and vesiculation. It should be mentioned that herpes zoster has been observed to occur during the exhibition of arsenic.

Lastly, in regard to the pathology of herpes as a whole, I may state that the disease presents in many of its features a family likeness to the exanthemata, as observed by Willan. It has a definite duration; it is anteceded by general pyrexial symptoms: and it presents eruptive phenomena, which are not successive, but go through stages of maturation and decline, as in the eruptive fevers.

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* "On the Correlation of Cutaneous Exanthemata with Neuralgia," by E. Woakes, M.D. Journal of Cutaneous Medicine, vol i. No. 3, Oct. 1869.

The Diagnosis.—Herpes cannot well be confounded with any other disease. The red base, upon which a few large clustered though distinct multilocular vesicles (bullulæ), larger than those of eczema, and smaller than pemphigus, are seated: with the acute regular course of the disease: its short duration: its non-secretory aspect, and the frequent presence of neuralgic phenomena, and ordinarily, of smarting, heat, and tension, are diagnostic. Erysipelas may resemble H. zoster; but it is not unilateral, the bullæ are large, the redness is accompanied by swelling, the edge of the blush is well defined, and rigors are present.

Prognosis.—There is no anxiety whatever as regards herpes, save in the occurrence of zoster in persons of feeble constitution in advancing or advanced life. In this case great debility, and ulceration in the site of the herpetic patch, may result, and the special care of the physician will be needed to sustain the powers of the patient.

The Treatment.—Usually the only thing necessary in the treatment of herpes is to protect the eruption from being irritated by the clothes of the patient and other external influences. This arises of course from the fact that herpes is a disease of definite duration, and that the eruption is, so to speak, its "explosion." The attendant nerve paresis, having produced the eruption, appears unable to secure the continuance of the disease; and so one finds that when once the eruption is "out," relief from pain, from neuralgia, and the like, is obtained, and the healing process at once commences in the affected skin. It is only necessary therefore to help the reparative process set a going by nature.

I use generally a lotion of oxide of zinc and acetate of lead with glycerine locally, and cover the patch over with a layer of amadou, or two or three layers of lint, in the early stage; and subsequently, when desiccation has taken place, apply a cerate composed of elder-flower ointment an ounce, lead lotion a drachm, and prepared calamine powder two scruples; but glycerine of tannin is equally good, and indeed may be used from the commencement. In zoster the eruption may be oiled over, and then dredged with flour freely, a layer of cotton wool being placed over all. The great thing is to avoid too much meddling. In some cases neuralgic pains are very severe: here poppy fomentations; equal parts of the linimentum belladonnæ P. B., and linimentum camphoræ; or olive oil and chloroform; morphia dressing, or, if required, the hypodermic injection of aconite and morphia, are necessary. And under these circumstances internal remedies are also to be used—especially quinine in full and repeated doses, ammonia and bark, or aconite or opium, as the case may be. After herpes zoster I always advise a course of tonics—the mineral acids and quinine with slight aperients. In certain other cases there may be special indications for general treatment, either by reason of pyrexia: or the debility of old age, for which bark and port wine and plenty of nourishing food are requisite. Should ulceration occur in zoster, nitric acid and opium lotion, or a weak solution of caustic (grs x—xx.) in nitric ether (ʒj) will be serviceable. In herpes iris nothing special is called for. In those cases which I have seen there was nervous debility present, and the mineral acids with bitters, and some astringent application locally, acted satisfactorily. Of course when herpetic eruptions occur in the course of catarrh or fevers, the internal treatment is that which is fitting for the general disease. See Formulæ, 39, 40, 47, 58, 60, 71, 72, 76, 77, 78, 88.

PEMPHIGUS.

This disease is characterized as regards eruption by the appearance of little separate blebs, usually grouped in threes or fours, seated upon slightly inflamed bases, which are quickly covered over by the enlarging bullæ. These blebs may attain a size varying between that of a pea and a hen's egg. They are distended with fluid, which is at first very transparent, but soon becomes milky. The fluid may be quickly reabsorbed, or the blebs or bullæ simply shrivel, the distended globe becoming flaccid. Very often the blebs burst in a few days, and then the contained fluid dries into crusts of lamellar aspect, beneath which is very slight ulceration. The contents are sometimes sanguinolent. The bullæ generally occur in successive crops; they develop in the course of a few hours; their outline is generally round or oval; they may be confluent, but are usually distinct. Now and then a species of false membrane is contained in the bullæ. The reaction of the fluid is generally alkaline, but with turbidity comes acidity. The local symptoms are, slight itching and smarting at the outset, and more or less soreness. The healing process in pemphigus is sometimes tardy, a thin ichor being secreted by the surface originally blebbed, and so a quasi-impetiginous crust is often produced. In rare cases in cachectic subjects, sloughing may occur. The disease attacks all parts of the body—but rarely the head, the palms of the hands, or the soles of the feet. Sometimes the mucous surfaces—ex., the intestines, vagina, &c., are the seat of bullæ in pemphigus.

Now this general description applies to all varieties, about which much unnecessary fuss has been made. The term pompholyx was originally used to denote the chronic and most indolent form of pemphigus, but the two terms are now used in the same general sense.

Pemphigus is almost always chronic, but there is an acute form; and therefore, in accordance with most authors, I make two groups, *acute* and *chronic*.

Acute pemphigus is seen in children, and is practically synonymous with pemphigus neonatorum. Now the greatest doubt exists as to the nature of this affection. According to Dr. Steffen,* there are three forms—(1) pemphigus occurring in children apparently healthy, and ending favourably; (2) pemphigus in children who have been badly nourished, or who have fallen into a state of marasmus, and in whom it is therefore the result of cachexia; and (3) syphilitic pemphigus. From all that I have observed and can gather, and basing my observations on such an epidemic as that which occurred in the General Lying-in Hospital in 1834-5, it seems clear to me that there is a non-syphilitic and a syphilitic form. When it is *epidemic* and occurs amongst the children in a lying-in institution, it seems to me to be the result of the operation of acute blood-poisoning, such as that of puerperal fever; and perhaps the disease ought not to be regarded as a pemphigus. Apparently healthy children are seized with severe constitutional symptoms: the skin is livid, the areolæ of the bullæ are dark; the contents fœtid; the ulceration is unhealthy, deep, its surface is dark, blackish, and exudes an ichorous matter, the edges being livid, shreddy, so that large circular, depressed, black, gangrenous ulcers, acutely produced, are present. The feet and hands may be affected, but also the limbs, the genital parts, the abdomen—even the mucous surfaces and head; death occurring about the tenth or twelfth day. In other cases, in badly fed and overcrowded children, the disease may not be so severe, but presents much the same kind of changes. There is a purplish base to the bullæ, sanguinolent contents, ichorous discharge, and a good deal of sloughing and gangrene; the disease being propagated by successive crops for weeks, and the child often dying, worn out by irritative fever and exhaustion. This in fact is the pemphigus gangrenosus which Dr. Whitley Stokes described as occurring among the ill-fed Irish children.

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* Wiener Med. Wochenschr., Sept. 12, 1866.

Pemphigus (neonatorum) acutus is also syphilitic, and occurs as a consequence of the cachexia of that disease. It occurs, not as an epidemic, but in connexion with other symptoms of congenital syphilis, and is well marked about the hands and feet soon after birth; it may give rise to deep ulceration.

Chronic pemphigus. This occurs in the adult At the commencement there may be headache and pyrexia; in a couple of days or so, little red points appear; upon these red points bullæ form, which rapidly increase and fill: they may have areolæ; all depends upon the progress of the bullæ. The latter and the red blush increase together, but generally not *pari passu,* for the bulla overtakes the areola and hides it from view. In two or three days more the bullæ burst, a raw surface is left, which scabs over, and at first the incrustation is yellow, then brownish. The bullæ seen on the limbs and trunk are successive, and so prolong the disease for some weeks. When the disease occurs in a very chronic form, it is called *P. diutinus,* the ordinary form is called *P. vulgaris.* Sometimes there is but one bulla developed at one time; this bulla is large and bursts in a day or two, crusting over, and disappearing, to be followed by another solitary bulla. This variety of pemphigus occurs chiefly in old people who are debilitated, and the first bulla appears after a little tingling about the ankle or the wrist. Five or six bullæ in all show themselves. This form is styled *pemphigus solitarius.* These chronic forms may occur in children and young persons as well as adults. There are two more varieties.

Pemphigus folicaceus is a very interesting variety. It commences on the front of the chest by a single bulla, and then by the development of others around, spreads over the whole surface, the bullæ being more or less imperfectly formed; the skin is red in many places, but there is not much infiltration; nor is itching severe. After the bullæ form, large yellowish squamæ are produced, with more or less desquamation; the scales, which may be large, are the remains of imperfectly-formed bullæ: they are free at their margins, and they are reproduced very rapidly. The bullæ are successive and confluent; oftentimes the skin exhales an offensive odour. The scales have been described as resembling French pastry, pieces of parchment, or papyrus, and vary in size from three-quarters of an inch to two inches. This is often a fatal form of disease, death being ushered in by irritation of the mucous surfaces and dropsy, especially in old people who are weak and out of health.

Lastly, there is a form of disease in which the characters of prurigo and pemphigus are intermingled, to which the term *pemphigus pruriginosus* is given. The bullæ are small and not well formed, though numerous, but the pruriginous itching is most distressing (see under the head of Anomalous Bullous Diseases, p. 220).

Morbid Anatomy.—Microscopical examination has detected in the fluid of pemphigus what seem to be mucus and pus-corpuscles, but are thought to be newly-formed epidermal cells. Bamberger* declares that there is a great deficiency of solids, especially albumen, together with an excess of ammonia in the blood, and an abnormal quantity of phosphoric acid in the urine.

Haight has shown that the fluid in pemphigus is collected between the layers of the horny portion of the epidermis. There do not appear to be any exudation corpuscles, and no increase of spindle-shaped cells to be seen in the skin, nor are loculi formed by their elongation. Pemphigus would seem to be the result of simple vaso-motor disturbance, and scarcely of disorder of the trophic nerves. (See p. 32.)

The causes of pemphigus are involved in obscurity.

Prognosis.—The cure is not rapid, but slow; recurrence of the disease is frequent. In old people, where the disease is general, and in children, when there is ulceration, the issue of the case is often unfavourable. The general condition of the patient must be the guide, and in these cases a cautious opinion should always be given.

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* Würzb. Med. Zeitschr., 1860.

Diagnosis.—Pemphigus can scarcely be confounded with anything else, the bullæ are so diagnostic a sign. In eczema of the hands, bullæ may be produced secondarily by the confluence of vesicles, but their origin is readily traced, and co-existent eczema is to be found elsewhere. Pemphigus is rare on the hands and fingers, *per se.* General eczema and P. foliaceus should not be confounded; in the latter abortive bullæ are present, the scales are larger and peculiar, and the skin is not infiltrated.

In ecthyma cachecticum the pustules contain bloody fluid; there are no true bullæ in the disease; the crusts are also thick and dirty; whilst the ulceration is deep. In rupia, the bullæ are smaller and flatter, the contents sanious, the crusts thick, dark, prominent —cockle-shell like; the ulceration deep and foul. Pemphigus foliaceus resembles pityriasis rubra; but in the latter there is no history of bullæ; the scales are altogether smaller, and they are imbricated in a peculiar manner.

Sometimes in impetigo contagiosa, the bullæ become somewhat large, but they are never distended as in pemphigus, but flat; the contents soon become purulent, and flat yellow scabs form, which are characteristic. The disease is clearly pustular.

Treatment.—In the acute forms the disease must be treated as a typhoid disease: an aperient should be given at the outset, then salines, with ammonia, unstimulating nourishment—strong broth —and as soon as the pyrexia is at all subdued, tonics should at once be had recourse to, with quinine in full doses. In children, chlorate of potash and quinine, with wine, should be administered from the outset. In the syphilitic variety much the same line must be followed as regards the child, whilst the mother should be well toned up and well-fed. Slight mercurial inunction in children who are in sufficiently good condition to bear it, should be employed. Then as regards local measures, weak solutions of permanganate of potash and carbolic acid, with the use of absorbent powders, and presently, when the sores are cleaner, weak nitric acid lotion, seem to be the best. An ointment of scrophularia nodosa is advised by Dr. Stokes, in the gangrenous variety. In the chronic forms, good diet, with quinine—for I believe this to be the best remedy for pemphigus—the mineral acids, and arsenic, are the remedies usually employed internally. In many of the cases of pemphigus that I have seen, there has been a deficiency of proper meat in the diet, and a good deal of worry, the two together inducing an anæmiated and exhausted condition. In these instances, plenty of good food, with the mineral acids and cod-liver oil, and a due attention to elimination, has sufficed for the cure. Some cause of debility may usually be detected in patients, and that should be treated specially. I think, in many cases, that aperients combined with tonics are called for. If a half-starved individual, or a debilitated subject, whose waste products have already overcharged the blood be fed or toned up without care being taken that proper emunetory work is carried on in him, the cure may be delayed. I have often seen this. In the more chronic forms, arsenic is regarded by many as the best remedy. I prefer quinine in full doses. In old people, pemphigus may be regarded as indicative of a "break-up." In such cases, a nourishing diet, quietude, and bark and acid are the best remedies. Locally, in these chronic forms of pemphigus, it is well to let out the fluid from the bullæ, to apply some inert powder, such as lycopodium, and subsequently weak astringent lotions, made of alum, tannin, zinc: or even ointments of zinc; and if the sores do not heal, to use a solution of nitrate of silver, gr. iij or gr. iv to ℥j of adeps, or to apply a weak white precipitate ointment.

In the pruriginous variety, conium and aconite, or quinine, internally, with alkaline baths, and a lead or calamine and opiate lotion, may be employed. A very good application, to cool and comfort the surface in all cases, is a mixture of common whiting, glycerine, and water, made into a thinnish paste, and spread over the surface by means of a brush.

ANOMALOUS FORMS OF BULLOUS ERUPTION: HYDROA.

Under the head of neurotic diseases, and in connexion with herpes, attention may be directed to certain vesicular or bullous forms of eruption, which have been described by Bazin under the term of arthritic (gouty) hydroa.* Recently writers in England have described under the term hydroa this same affection, but, as it seems to me, mixed up with other forms of eruption; since they have not properly distinguished between urticaria bullosa, erythema papulatum, sudamina, and the hydroa of Bazin. Now I do not like the application of the term hydroa—which clearly signifies a disease connected with sweat—adopted by Bazin, the more so as I think his varieties of hydroa can be referred to herpes and pemphigus. I will, however, in the first place state Bazin's views, as far as I apprehend them, in reference to the particular disease which he describes as hydroa; and then give subsequently my own opinions upon the matter.

Under the name, then, of arthritic hydroa, Bazin originally describes "an affection analogous to the ordinary herpes of Willan, characterized by vesicles or small bullæ placed in groups, or at intervals more or less distant." Further, according to Bazin, this arthritic hydroa is herpes successive or remittent and chronic, and it is clearly connected with a gouty diathesis. Bazin distinguishes three varieties of hydroa:—1. *Hydroa vesiculeux.* 2. *Hydroa vacciniforme,* confounded with aphthæ chronique (phlyctène chronique of Alibert). 3. *Hydroa bulleux* (pemphigus, with small bullæ).

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* See Bazin's work, p. 192.

Hydroa vesiculeux is generally confounded by authors with erythema papulatum. First, as regards *Seat :* " It is developed on the cutaneous and mucous surfaces. On the *skin* it exists ordinarily on the uncovered parts—ex., back of the hands and wrists and on the front of the knees. In most cases the buccal mucous membrane is affected, and then the eruption occupies by preference the lower lip and the inside of the cheeks, and appears after its development on the skin. However, in one of our cases, the base of the uvula was surrounded by a circle of vesicles. The conjunctiva may also be the seat of this eruption."

Symptoms.—" It is sometimes preceded by malaise, anorexia, and a slight febrile attack, but these prodromic symptoms are often wanting, or are so little marked that the attention of the patient is first attracted by the development of the vesicles."

Whatever be the seat of the eruption, it presents the following characters :—

" There is seen at first spots of a deep red colour, small, rounded, a little raised, and with their edges clearly defined. These spots vary in size from that of a lentil to that of a piece of twenty centimes ; they are sometimes surrounded by a rose-coloured areola ; they show soon in their centre a small vesicle filled with transparent yellowish liquid. This vesicle appears the day following that of the red spot. It dries rapidly from the centre, which is occupied by a small blackish scab, whilst the liquid is absorbed from the circumference. The phenomena take place towards the second or third day of the eruption."

The subsequent phenomena are as follows :—" The liquid in the circumference of the vesicle is reabsorbed, whilst that which occupies the centre becomes a blackish scab. At last it may happen, especially during cold weather, that the fluid exuded in the vesicle is absorbed rapidly. It will then have only a small whitish or yellowish macula, placed in the centre of a red disc, and formed by loosened epidermis. In this case it is that the affection has been confounded with erythema papulatum. On the mucous surfaces the vesicles are whitish and surrounded by a violet-coloured areola—the scabs are detached sooner. The red discs and vesicles are more or less numerous. They are generally separated by intervals of sound skin ; sometimes they are disposed in groups of two or three, touching at their circumference. They do not all appear at once, but by successive crops during many days. The affected parts have scarcely any itching. The febrile symptoms which exist rarely at the commencement cease when the eruption is developed."

Duration and Termination.—" The duration of hydroa vesiculeux is from two to four weeks ; each element in the eruption taken by itself runs through its course in four or five days. The affection is prolonged for many weeks only by the eruption of fresh crops of vesicles. A relapse may take place."

Etiology.—"The disease is seen in both sexes, but more frequently in the male. It appears among adults from twenty to thirty years of age. It is more frequent in spring and autumn; cold and variation of temperature have a marked influence on its appearance and course. Finally, it is always seen amongst people who have had still symptoms of gout."

Nature.—"Hydroa vesiculeux," says Bazin, in continuing his description, which we have given above almost at length, "is essentially arthritic—at least, we have always found it among arthritic subjects, and it has steadily presented clear relation to gouty manifestations."

Prognosis.—"This affection is not grave; it disappears of itself in four or five weeks. It is subject to recur." Bazin treats it by prescribing alkaline baths and employing hygienic means, a soft diet, and diuretic drinks.

Hydroa vacciniforme is the same, only that the vesicles are varioliform.

Hydroa bulleux (pemphigus with little bullæ) "is an arthritic affection which is generally little known. Since our attention has been drawn to this point," says Bazin, "we have observed three cases of pemphigus with 'small bullæ.'"

"The eruption shows itself by bullæ, which present one important character—the inequality of their size. Some are as large as a lentil, the largest do not go beyond the size of a pea. These bullæ are rounded, arranged in an irregular manner, in groups of three or four, they are filled with transparent fluid, which grows thick quickly and takes a yellowish colour; finally they are placed on a red surface, which extends from their base in the form of an areola. Whilst new bullæ are developing, the old ones dry up and are replaced by a yellowish scab; and if one of these is rubbed off by scratching there appears a violet-coloured, slightly excoriated surface. In the interval of the crops of bullæ there is no morbid phenomenon observed except the ordinary well-marked itching. The patient preserves his appetite, and the nutrition is not at all altered." Bazin states that the course is chronic, that the disease appears in successive crops, and lasts generally from five to six months; that it is more frequent in men than in women, and appears in adults from twenty to forty years; that the seasons and variations of temperature have a marked influence on its development; that it is most common in the spring, and is excited by gout.

Speaking of *Diagnosis,* Bazin says: "The characters of hydroa bulleux permit always of its being recognised. It cannot be confounded with pemphigus; it is important to establish well the differential diagnosis between these two affections, which have not always the same origin, and which do not appear of the same gravity. In hydroa bulleux the bullæ are small, and do not go beyond the size of a pea; they are further remarkable for the inequality of their size, they occupy regions sufficiently well circumscribed. The bullæ of pemphigus are larger—they may attain the size of a nut or even of a hen's egg; they exist in various parts, and extend sometimes over the chief part of the skin. Finally, hydroa bulleux terminates by recovery after a duration of four to six months, whilst death is the termination of pemphigus in the great majority of cases." I confess I am totally at variance with Bazin in reference to these latter statements.

It will be evident that these cases of hydroa of Bazin are merely instances either of herpes or ill-developed pemphigus. Differences in the size of the bullæ afford no ground for distinguishing the eruption from pemphigus. The following account of hydroa, quoted by the *Amer. Journal of Syph. and Dermat.*, tells the same tale:—

"This disease, an old one perhaps re-named, has lately been very fully described in the *British Medical Journal.** It would seem from its clinical history that some cases present appearances peculiar to it alone, while others show resemblances to diseases otherwise named. The diseases which it in a measure resembles are, urticaria and the various forms of erythema, and perhaps mistakes might be made between it and the vesicular syphilide, varicella, and variola. As a rule, it has a definite duration, and disappears spontaneously in a few days, and may be accompanied by slight fever. *The first phenomenon noticed is a faintly-marked, rosy spot, which is soon replaced by a single vesicle, which may remain intact or may become umbilicated, or may dry up and become an umbilicated crust of a yellowish-white colour. Around this vesicle inflammatory changes very soon take place; a zone of a colour varying from red to violet, with a well-defined, slightly elevated periphery, forms, and then around this perhaps a ring of small vesicles, which may coalesce and form a circumferential bulla.* These spots vary in size from a line to four or five, or even more. There is no hyperæmia between the patches, as the inflammatory action is sharply confined to them. This condition differs from that of herpes phlyctenodes, in which the inflammatory areola is not thus sharply defined. There is usually no pain or itching, merely a little heat or a feeling of tension. The same appearances, somewhat modified, have been observed upon the buccal mucous membrane. The eruption disappears by the fall of the crust, which is formed from the vesicle, and is generally seen in the centre of each patch, and then there remains a more or less well-marked hyperæmia with slight infiltration. The sites of election are the back of the hands, the forearms, face, neck, and also the trunk and lower limbs. It is generally symmetrically developed."

If the reader will turn to my description of herpes iris, he will notice that the characteristic features of that variety of herpes are reproduced in the above description of hydroa, and particularly in the words I have italicized.

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* May 14, 1870.

But with a view to afford the reader a clearer insight into the character of these unusual forms of pemphigus and herpes, I will just sketch the features of several varieties or phases of eruption, accompanied by the development of bullæ, which I have noticed from time to time in practice.

In the first place, the practitioner may meet with cases in which, with or without some slight antecedents malaise, or pyrexia, a few scattered spots answering as regards eruptive features to Bazin's hydroa vesiculeux occur—that is to say, a few red irritable spots appear, having in the centre a small oval or roundish bulla, which may enlarge to the size of a split pea, but is generally not so large, and dies away in the course of a few days. I have noticed these spots not only on the back of the hands, but the arms, the legs, and the shoulders. The disease may last, by the development of successive crops of solitary vesicles, for ten days or more. I suppose it is the hydroa vesiculeux of Bazin.

The more exaggerated form of this disease is that in which small bullæ are developed rapidly over a large extent of surface, or even the whole body. I have at the time of writing under my care a boy, eleven years of age, who has suffered from recurrent attacks of bullæ all over the body at intervals of several weeks. Occasionally an attack will be composed of two or three successive crops, which develop at intervals of a few days. The eruption is accompanied by much irritation: it is composed of isolated bullæ the size of a small split pea, or less, scattered all over the body, and the bullæ leave behind pigmentary stains. The disease would answer to Bazin's hydroa bulleux, only that it is more general; but it is, I think, a pemphigus with small bullæ.

One of the last cases of the kind, in a less marked degree, I witnessed was in a well-known classical scholar, of mature age, who had become depressed by over-work. He had on the top of the right shoulder a patch of eruption made up of six or seven distinct little bullæ seated upon a slightly erythematous base, and assuming the characters and running the course of a patch of herpes. On the front of the chest were two little patches, the one made up of three bullæ, the other of two bullæ the size of the smallest split pea, seated on a reddish base. Scattered over the limbs, forearms, and thighs were a number, about eight or nine, small bullæ, each one being separate. These little bullæ varied in size from that of a pin's head to that of a split pea. The disease disappeared in the course of a week or ten days. The patient was suffering also from eczema of the legs. The general health was fair, and the gentleman suffered only from general debility.

The features of this case combined those of both herpes and abortive pemphigus.

But the similarity of cases of the kind under notice to herpes, and herpes iris especially, on the one hand, and pemphigus on the other, was exhibited still more clearly in other cases which have been under my care. I may mention one case in particular. A lady, aged twenty-three, who had just returned from India, consulted me in December 1872. She told me that her disease began in 1870 with an attack of herpes of the face, after a nine months' residence at Singapore, and after she had had a sharp attack of "Penang fever," which reduced her much, and which hung about her off and on for a year, though the acute attack itself passed off in a week. The herpetic eruption of the face showed itself on and off for a year, and then a patch of disease appeared on the inside of the left thigh, and consisted in a redness with little bladders upon it (Nov. 1871). As she was leaving Singapore, which is relaxing and malarial, the eruption showed itself in different parts of the arms and legs, and subsequently appeared on the chest and back. On board ship, between Ceylon and Aden, on her way home, she suffered from "quotidian" fever. She had already taken a good deal of arsenic and iron. When I saw her there was scarcely a single inch of her body from head to foot, including her face, hands, and feet, which was not dotted over with bullæ of the most varied sizes. Some were of the size of pins' heads, and often grouped together, after the fashion of herpes; some were as large as pigeons' eggs, and could not be distinguished from those of ordinary pemphigus. The patient was hysterical, exceedingly low, and complained of shivering (? from the pain), and of intolerable burning and itching at times. The individual bullæ disappeared by resorption of their contents or the formation of scabs, and the drying up of the reddened surface beneath; but every few days fresh crops of bullæ appeared. Under the influence of large doses of assafœtida, quinine and iron, wrapping in oil, and the application occasionally of a calamine and weak carbolic lotion, this, the most curious and severe case of bullous disease I have ever seen, got well, and with it disappeared the tendency to "periodic fever." The lady is now quite well.

This case reminded me closely of that of the boy of eleven years before described, except that it was more exaggerated in all its features.

In some instances in which this quasi-herpetic or pemphigoid disease makes its appearance the eruption is preceded by an unusual amount of irritation, and it is complicated or followed by true pruriginous rash. This is very probably the disease termed pemphigus pruriginosus. Two very remarkable instances of this came under my care in the year 1870. In the one the disease supervened to an attack of ringworm of the body, the irritation from, and scratching for the relief of which seemed to be the exciting cause of the disease.* The other came on idiopathically in a man who had gone through much anxiety and worry. The following were the peculiarities of the two cases. The disease was symmetrical, and the eruption appeared in the following parts —the points of the elbow, and just above it on the back of the forearm, over the back of the ulna, the calves, the part of the buttocks the patient sat on, over the angles of the scapulæ and the points of the shoulder—in fact, the prominent parts of the body, which bear the most friction or pressure. The *limitation of the disease to these parts in my two cases was most peculiar.* The eruption consisted of little bullæ, four, five, or more, seated upon a reddish base of the size of a shilling or more, the size of the bullæ being larger than those of herpes and less than those of ordinary pemphigus. Before the bullæ appeared there was smarting for half an hour or so, which deepened into intense irritation, to be relieved by the development of the bullæ. The bullæ died away, or they scabbed over and burst in a day or two, leaving behind little solid papules of pruriginous character. There were successive eruptions of bullæ, the area of the disease became after a while generally thickened, darkly pigmented, and knotty from the development of solid, fleshy, itchy papules. Sleep could not be obtained on account of the irritation which came on at night. There were no rheumatic or neuralgic pains about the body. Excitement or fatigue seemed to determine an outburst of eruption and to intensify the itching. The patients were, however, pallid, fagged, and overworked. In one case a spot on the leg like pemphigus showed itself. There were no wheals. Now I take this disease to have been the same as that above described, localized to particular regions, and accompanied by the development of prurigo in the seats of the bulloid eruption, and it answers to the term pemphigus pruriginosus.

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* See Lancet, p. 522, Sept. 22, 1871.

I may therefore sum up the foregoing remarks by saying that there is a form of disease which seems to stand midway between herpes and pemphigus, the features of which ally it, now to herpes, now to pemphigus. It may consist of solitary small bullæ seated on a red base, and scattered here and there over the body (hydroa vesiculeux), or the bullæ may be surrounded by small vesicles (herpes iris); or these two dispositions of the bullæ may be seen in one and the same case, the eruption being localized to a certain part of the body, or generally distributed and accompanied in severe cases by pyrexia and marked constitutional disturbance, when it is often the result probably of malarial poisoning. The eruption may recur more or less periodically; and lastly it may be complicated or followed by prurigo, and in that case will answer to the designation of pemphigus pruriginosus.

In thus describing clinically these unusual forms of "bullous" disease, I have attempted to class them as forms of well-known—that is, under recognised forms of—eruption, because of the undesirability of making new designations. I entirely object to the use of the term hydroa as applied to these varieties of eruptions.

I think they may fairly be taken as forms of herpes iris and pemphigus pruriginosus.

Pathology.—Now as to the pathology of these unusual forms of bullous eruption. The nervous system must be directly concerned in their production. It is essentially in the overworked, the fagged, the depressed, the excited, that these eruptions occur, and I imagine they result from vaso-motor disturbance, but nothing definite is known about them.

Diagnosis.—The characters I have given are sufficient for diagnostic purposes. The only disease with which they might be confounded is urticaria bullosa, and I do not know that any mischief would accrue to the patient from such a mistake.

Treatment.—This in my hands, even in the worst cases, save those that are pruriginous, has been very satisfactory. My first care is to attend to the general condition of my patients as regards their emunctory organs and their hygiene. Anxiety, worry, and depressing influences must be neutralized. The patient must be ordered to get good air, to take plain nourishing food, and to avoid luxuries of the table, overwork, and fatigue of all kinds.

Anæmia should be carefully attended to, and remedied by iron preparations.

The main general remedy in all these cases, according to my experience, is quinine. It should be given in from two, for mild, to ten-grain doses, in severe cases, and it will generally succeed in checking speedily and vanquishing the disease. But local measures are of no little importance. I am in the habit of employing alkaline and bran baths at the outset, of applying either simple oil, or a lotion containing oxide of zinc and levigated calamine powder, and, if the parts are much excoriated, of subsequently dressing the sores with benzoated zinc ointment, or Kirkland's neutral cerate.

In the pruriginous variety of the disease, intense difficulty is occasionally experienced in curing the disease, and this requires all the tact and skill that the physician can bring to bear upon the matter. The hygiene, diet, and general surroundings of the patient are of great moment, in so far as they influence the general health of the patient; and iron, nux vomica, cod-liver oil, and quinine may be severally needed in different cases, according as the indications present are those of anæmia, nervous debility, wasting, neuralgia, or periodicity. I have found at the outset that diuretics—any that act efficiently will do—freely given, do much good in relieving the hyperæmia of the skin. If the disease occurs in the gouty, I have given colchicum with benefit, but not without combined tonics.

Locally I know of nothing better than first of all, vapour baths, to encourage the skin to proper action, and the use of a weak lotion made of liq. carbonis detergens ʒij to ℥ss with aquæ ℥vj applied night and morning. Subsequently sulphuret of potassium baths may be regularly given for a long time, and followed up by the drinking of some sulphurous or iron waters.

CHAPTER XII.

SUPPURATIVE INFLAMMATION, OR PUSTULAR DISEASES—IMPETIGO—CONTAGIOUS IMPETIGO—ECTHYMA—FURUNCULUS—ANTHRAX, OR CARBUNCLE—MALIGNANT PUSTULE—DELHI BOIL—ALEPPO EVIL—BISKRA BOUTON.

General Remarks.—In many very different diseases of the skin pus is present, and if the term pustular were used in its widest sense, a large number of diseases would have to be included under it; for instance, acne; parasitic diseases, such as favus and scabies; pemphigus; variola; farcy; varicella; and so on. But in the diseases just named the presence of pus is often not a primary or even essential condition, and its importance is thrown into the shade by the prominence of other features. In those affections which may more strictly be called pustular, the suppuration is the leading and the primary condition, the particular morbid condition the practitioner has to recognise and to remedy. Now under the term pustular diseases, thus defined, are usually comprised impetigo, ecthyma, and furuncular affections—the latter term including furunculus, or boil; anthrax, or carbuncle; and pustula maligna, or malignant pustule. I shall also refer under this head to Delhi boil, &c.

IMPETIGO.*

In describing eczema it was stated that in some cases instead of the secretion remaining sero-plastic, it became charged with pus-cells—in fact, sero-purulent or puriform. The variety in which this occurred is called eczema impetiginodes (pustular eczema). If this purulent character be assumed from the first, then the disease has been called impetigo. Most authors agree in regarding impetigo as a pustular eczema—an eczema occurring in a pyogenic habit of body. I may therefore rank it with eczema; and I refer the reader to that disease for a description of ordinary impetigo. I discard the term impetigo, in fact, for any other disease than the one I am now about to describe under the name of

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* IMPETIGO RODENS.—Under this term have evidently been included many different diseases. Hardy calls the affection scrofulide pustuleuse. The disease is said to occur about the sides and tip of the nose, first as small pustules on a red base, that break out into ulceration, and are replaced by a brownish scab, which covers over a dirty foul ulcer. This I take to be a syphilitic disease and nothing more. But impetigo is moreover a superficial pustulating and non-ulcerating affection; the word rodens signifies an "eating out," and it is most probable that by I. rodens has been meant now a syphilitic, now a scrofulous ulceration. The disease finds no place in my work.

IMPETIGO CONTAGIOSA, OR CONTAGIOUS IMPETIGO.

This, at times a common form of cutaneous disease, is seen especially in dispensary and hospital practice. It is universally classed by practitioners with eczema impetiginodes or impetigo simplex, but yet it is, as regards nature and characters, a wholly distinct affection. I first described it as a separate disease in 1862. Its cure is usually certain and easy by local means. It is classed under the term porrigo, as used by some writers, and is one of the many varieties of eruption which together constitute the composite "scald-head." I have hitherto called the disease contagious impetigo; for it is essentially inoculable (contagious), but I am quite prepared to accept a better name. The disease is often quasi-epidemic; it differs in severity and in features at different times, tends to run a definite course, but it exhibits a uniformity of character as regards the eruptive condition, and is vesico-pustular in type. I have had the pleasure of convincing not a few of the distinctness of this form of disease; and recently Dr. R. W. Taylor,* of New York, has recorded cases under his care, whilst the existence of the disease is now allowed at Vienna even.

Clinical History.—The disease is seen amongst children of the lower orders especially, probably in great measure because the disease spreads by contagion freely amongst them. It occurs also *in those who have all the advantages of social position and good hygiene.* It is ushered in occasionally by smart, generally by slight, fever; or the child looks ill, pale, languid, and is said to have been "in a burning heat," or to have had "cold chills." There is clearly an affection of the system at large before the occurrence of any eruption. In the summer of 1870 I had a large number of cases under my care at the hospital, and in many instances there was smart pyrexia accompanying the development of the disease.

The eruption in the disease in the majority of cases appears first of all on the face, sometimes on the top or back of the head, and in the form of "little watery heads" (vesicles), that enlarge into flat bullæ if they are not injured by scratching. Sometimes the hands are attacked at the outset, and look as if burnt here and there; phlyctenæ may also arise out of and around the remnants of vaccinia, or about cuts or bruises. The disease then extends to other parts, the back of the neck, buttocks, feet, &c. The vesicles are always isolated. In five or six days the bullæ may reach the size of a sixpence or shilling, unless ruptured, and are then flat and depressed in the centre, their contents becoming turbid. Usually the vesico-pustule is the size of a large split pea or thereabouts. The secretion consists of lymph-like fluid, granular cells, and subsequently pus-cells.

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* Amer. Jour. of Dermat. and Syph., Oct. 1871, p. 368; and Boston Med. and Surgical Journal, June 6, 1872.

Scabs commence to form a few days after the appearance of the disease. They are characteristic of the disease, varying in size from that of a split pea to a shilling; they are flat, straw-coloured, dry, and granular-looking, and appear as if "stuck on" to the part; they present, as a rule, no inflammatory areola around their circumferences, though this is the case in severer instances of the disease. If removed, little sores are observed beneath, more or less filled in by gummy-like secretion, or a little pellet of aplastic lymph, and when the scabs fall off there is an erythematous base left behind, the hue of which gradually fades away. The disease may be spread from spot to spot by direct inoculation with its secretion, in the act of scratching. The crop of vesicles is to some extent successive, though the majority of the places "come out" in the first week or so. In some instances the disease resembles vaccinia very closely. There is always a uniformity about it; it always commences by vesicles; there are no papules present at the height of the disease. On the face the spots may be confluent, and then the disease resembles eczema impetiginodes; but the patches are made up of the elements described above. On the scalp the disease consists of circular, mostly isolated, flat-scabbed spots about the top and back of the head, the hair being matted by the crusts. Usually, no pediculi and no offensive smell are present. Now it is very important to note that an eczema may be readily excited in fair children by scratching or the irritation of the discharge, in connexion with impetigo contagiosa—and then the characteristic features of the latter disease are masked. The result of neglecting to attend to this point is that the practitioner regards the disease present as solely and entirely an eczema. The error, too, is a very common one.

The mucous membranes of the eye and the nose are sometimes implicated; then inflammation is produced by the development of little ulcers, that take their origin in the formation apparently of vesico-pustules, identical with those seen on the surface of the skin. The eye may look as though affected by slight purulent ophthalmia, but soon recovers itself.

Many children in a house may be attacked by contagious impetigo at one and the same time, or consecutively, and in such a way as to impress upon even friends and attendants the idea of its being contagious. *The disease may complicate eczema, scabies, and other affections, and vice versâ.*

I noticed in the quasi-epidemic of 1870, of which I spoke before, how completely the definite course of the eruption was masked by the successive cropping-up of fresh places, in part induced by the inoculation from scratching; and also by the fact that the patient scratched open the pustules before the scabbing had taken place, and so prevented their drying and healing up. The general answer to the question, "How did it begin?" was, "By a little watery head." Some parents stated that they "thought it was a pock;" others that "it looked like horn-pock;" but all declared that it commenced by separate vesiculations, which enlarged, if left undisturbed, into bullæ, and were replaced by scabs. In this respect the disease differed entirely from ordinary impetigo. The face was the part most usually attacked, but also the hands, head, and limbs.

I have again and again reproduced the disease in others by inoculation, and in all cases the resulting disease was typical; it was, unlike ecthyma, superficial, and the vesico-pustules were formed in the rete.

It has been asserted by some—Moritz Kohn of Vienna, and Dr. Piffard*—that the disease is parasitic. This was one of the very first points that I took care to investigate when I originally studied the disease as a separate skin affection. I could, as have these gentlemen later on, detect fungus elements *in the crusts*, but *not in the fluid contained in the vesico-pustule before this bursts.* The fact of finding fungi in the crusts is explained by that of the access of air to the layers of the crust. In the first place, in order to show that the presence of the fungus is something more than an accident, it would be necessary to discover the fungus in the fluid of the vesico-pustule before it bursts. But the whole character and course of the disease, with its febrile disturbance, its vesico-pustular aspect, the definite course of each vesico-pustule like that of an herpetic vesicle, and the like, are utterly unlike those of a parasitic disease. The disease is certainly not parasitic, and I think my opinion on the point is of some little value, since of all dermatologists I am perhaps the one most firmly wedded to the conviction that parasitic growths are potent producers of mischief.

Diagnostic features are—its apparently epidemic character in many cases; the antecedent febrile condition; its attacking children; the origin from isolated vesicles, which tend to enlarge into blebs, and to become pustular, the bleb having a depressed centre, and, it may be, a well-defined, slightly raised, rounded edge; the *isolation* of the spots: the *uniform* character of the eruption, and its general and scattered condition; its frequent seat and commencement about the face or head; the circular, flat, granular, yellow crusts looking as if stuck on; its contagious nature and inoculability; its frequently following in the wake of vaccination; the absence of pain, and especially, troublesome itching at night.

Contagious impetigo may be confounded with *eczema;* but the history is altogether different, and the isolation, the small scabbed patch, the characters of the crusts, and the facility of cure, at once distinguish it. *Impetigo sparsa* does not arise from a vesiculation, but is primarily pustular, made up of aggregated pustules; it is not phlyctenoid; it is not contagious nor inoculable; it does not run a definite course; it is not confined to the young; it is not so amenable to treatment. *Pemphigus.*—In this disease the blebs are larger, more persistent, oval, and distended; the contents are watery and acid. Pemphigus is non-contagious; it does not occur especially on the face or the head; it is less inflammatory, and wants the characteristic scabs. *Ecthyma.*—This is primarily a pustular disease; it is seen also in adults; there are more induration and swelling, and a good deal of pain in connexion with the formation of pustules; it is non-contagious; the scabs are heaped-up and dark. *Pustular scabies.*—This is the disease with which contagious impetigo is at times confounded. It must be remembered that the two diseases may co-exist. *In children* both attack the buttocks frequently; both may exist about the hands and feet; but the distinctions are really very clear. In scabies there is no febrile condition; the eruption is *multiform.* If there be ecthymatous pustules, like impetigo contagiosa, they are covered by dark thick crusts; there are plenty of characteristic vesicles, with cuniculi and papules. If the impetigo contagiosa begins about the buttocks, it appears presently on the face or the head, or both. There is no irritation, nor are the effects of scratching visible about the body as in scabies; the bullous origin of the disease is distinct, and the scabs are characteristic. The hands are not specially affected in scabies in the child, but even impetigo contagiosa may attack the hands and feet markedly; still there is no *multiform* eruption, and there are no cuniculi in the latter.

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* New York Med. Journal, June, 1872, p. 623.

When a correct diagnosis is made, the treatment is easy. *The natural course of the disease is a short and definite one.* The disease sometimes occurs in badly-hygiened subjects, and therefore tonics may be required. The secretion is an active agent, by means of inoculation self-practised by the patient in scratching, in transmitting the disease from one part to another. Therefore it is of first importance to destroy the activity of the pus, and to alter the behaviour of the surface that secretes it. I invariably use an ointment containing five grains of the ammonio-chloride of mercury, and apply it to the surface beneath the scabs, which I cause to be removed by poulticing or fomentation with warm water. This rapidly cures the disease.

ECTHYMA.

This disease is described as consisting of isolated phlyzacious pustules—viz., those which are "large, raised on a hard base, of a vivid red colour, and succeeded by thick, hard, dark-coloured scabs, beneath which there is ulceration." The pustules are generally distinct, round, and isolated; they are mostly general, but may be partial, and leave cicatrices behind. The shoulders, buttocks, and limbs are the parts usually attacked. There are two chief forms described in books—acute and chronic.

Now, as a matter of fact, acute general ecthyma is rare, but I have seen it. The ordinary scattered ecthyma is practically always the result of the action of some irritant upon the skin, in an unhealthy or badly nourished subject; and so ecthymatous pustules frequently occur in connexion with scabies and phthiriasis, and more rarely prurigo, eczema, and other diseases.

I will describe the acute and chronic forms in detail.

Acute ecthyma commences with slight febrile disturbance, and occasionally sore throat; locally, there is first a sense of heat and burning, followed by the appearance of reddish raised points, with hard indurated bases, and distinct vivid areolæ; these points, which vary in size from that of a pea to that of a shilling, quickly pustulate, and are often accompanied by acute, sharp pain. In two or three days the pustules give exit to discharge, which dries into hard, adherent, dirty, discoloured scabs, covering over circular ulcerations: the crusts fall off in a week or so, leaving behind dark stains. The ecthymatous spots may be many or few; in the former case a good deal of irritation is set up; the patient may be unable to sleep from pain, and the glands and lymphatic vessels may become inflamed, small abscesses forming subsequently. The disease is generally protracted by successive crops of pustules, or it may relapse into a chronic state. The limbs, shoulders, and trunk are the chief seats of the disease.

This acute ecthyma is a great rarity in my experience, and I am by no means indisposed to regard it as the result of syphilis; though I am not sure that it may not occur from general debility in badly nourished persons.

Chronic ecthyma, as before hinted, generally results from the action of some irritation, as in scabies, in connexion with pediculi, and from scratching in badly nourished subjects. It has been usual to describe three varieties: E. infantile, luridum, and cachecticum. There is no need to make such varieties; of course when an ecthymatous pustule develops in a cachectic subject, it may slough or ulcerate, and it is the occurrence of such a circumstance that is intended to be brought to notice in the use of the two latter terms. The so-called *E. gangrænosum* is rupia, and nothing more.

The ecthymatous pustules in the chronic disease are of similar characters to those of acute ecthyma. They are painful, with hard, inflammatory bases and a small central collection of pus. When they occur on the limbs, especially the legs, in old people they are followed sometimes by troublesome ulcers.

Pathology.—In ecthyma the seat of disease appears to be the uppermost layer of the derma, not unlikely about the glands of the skin, the depth of surface involved is less than in furunculus, and there is no "core," otherwise ecthyma would be well classed with boils. The tendency to ulceration and sloughing, the lividity of the inflammatory areola, the disturbance of the general system, all point to a cachectic condition.

Causes.—The predisposing causes are always such as lead to debility and an impoverished state of blood. They are, in infants, bad nursing, suckling by mothers much out of health, scabies, bad clothing, damp dwellings; in adults and others, over-work, fatigue, convalescence from acute diseases, bad food, privations, various occupations that induce irritation of the skin—ex., bricklaying, excesses of all kinds, debauchery, uncleanliness, night-watching, overcrowding in public institutions—ex., workhouses, jails, hospitals, and such like. The immediate *exciting* causes are scabies, phthiriasis, the use of acrid medicinal applications, and emphatically *scratching*.

Prognosis is to be made according to the general condition of the patient. The ecthyma, *per se*, is of little gravity, save when it is accompanied by sloughing, as in old people; then it is grave.

Diagnosis.—The distinct, large, isolated pustules, with an inflamed areola and hard base, distributed over the body, are very distinctive of the disease. It may be confounded with *Impetigo sparsa*, but in this disease there are rather sero-pustules than pustules, which are very superficial; the discharge is viscid, yellowish, there are no dark scabs, no indurated, inflamed, and painful bases. *Furunculus* is deeper, it runs a slower course, and contains a central "slough" or "core," as it is called. It is more circumscribed, and there is little scabbing.

Treatment.—It is necessary to recollect, in the first place, that ecthyma is a cachectic disease: that it often occurs in those in whom the eliminating organs are sluggish, and in whom, moreover, effete material has been largely produced in the system: and in the second place, that it is either primary or secondary—as, for example, when it occurs in connexion with scabies or phthiriasis. When it is secondary to other diseases, or if it arise from the action of local irritants upon unhealthy skins, as from the contact of lime or sugar, one has only to remove these sources of evil, and use soothing remedies with astringents — alkaline lotions, or glyceral tannin, or biborate of soda or zinc ointments—and give internally iron, mineral acids, or other suitable tonics, for the ease to get well. Supposing there is no external cause of this kind, the impoverished state of blood which gives rise to the disease must be treated. I am of strong opinion that elimination first of all needs attention. In young subjects, active aperients together with tonics are the best remedies. After a good colocynth purge, the exhibition of a mixture containing sulphate of magnesia, sulphate of iron, tincture of calumba, and cinnamon water, or if the appetite is bad, dilute nitro-hydrochloric acid with sulphate of magnesia, quinine, and infusion of roses, soon improve the whole tone of the system. At the same time the patient must eat wholesome food, get proper rest, and a proper amount of air in his sleeping-room; and it is of much importance that he be cleanly, and not over-worked. All these are material points in the treatment. If the patient be young and growing, he must be particularly well-dieted, have a good amount of wine or sound beer, and take cod-liver oil. Locally, in ecthymatous cases, where the disease is idiopathic, emollients are alone admissible in the early stages—warm lead lotion and poppy-head fomentations. Presently, opiate and tannin ointment—extract of opium, ten to twenty grains, a scruple of tannin, with an ounce of simple ointment may be employed, and finally the remedy so much in vogue on the Continent for boils—the emplastrum fuscum (see Formula 140) may be used. I trust to the general and not the local remedies. But there is still the chronic form of ecthyma to deal with. Even here I lay great stress on a sufficiency of aperients, and on the mineral acids, with bark, and bitters of all kinds. If there be much nervous disturbance, pain, restlessness, and the like, opiates judiciously exhibited are of service; change of air will sometimes work wonders, and in the *cachectic* varieties, good living—plenty of meat and wine—with bark and ammonia, must needs be given. And locally in chronic ecthyma the scabs should be removed, and attempts made to get clean and healing surfaces by the application of weak Condy's fluid, weak carbolic acid lotion, simple sulphur ointment, or weak nitrate of silver lotion, when stimulation is necessary. If there be much irritation, lead and opium lotion, or charcoal dressings, may be of service. A good application is an ointment made by rubbing together an ounce of lard, and half a drachm or so of Friar's balsam.

No two cases of ecthyma are exactly alike, and the special knowledge of the physician is often needed to detect some flaw in the performance of the organic functions which mainly determines the occurrence of the disease.

FURUNCULAR AFFECTIONS.

There are several varieties of eruption classed under this head. Common boil or furuncle, carbuncle or anthrax, malignant pustule, together with Delhi boil, Aleppo evil or boil, and Algerian boil or Biskra bouton, make up the list.

It has been said that furuncular affections differ from impetigo and ecthyma, by, amongst other things, being deeper, and by their pustules containing in their centre a dead piece of tissue which is called the "core," in fact a central "slough." Now this "core" is indeed the essential feature of a furunculus; its nature will be noticed by-and-by. Furunculus or boil, and anthrax or carbuncle are forms of one and the same disease. Malignant pustule is produced by a specific poison, and should be ranked elsewhere. The general characteristic then of furuncular affections is the occurrence of inflammation of a limited extent, affecting the tissues deeply, the central part dying and forming “the core.” Some think this core is a true exudation, some a piece of “dead cellular tissue.” When a boil is, so to speak, multiple, when there are several “cores,” and the cellular tissue is much involved, and more or less sloughy, then a carbuncle exists. But, to put it in text-book language, “the characters of distinction between furunculus and anthrax relate to their prominence, depth, breadth, colour, number of cores, and degree of pain. Furunculus is a solitary pustulation, it is more prominent, less deep, involves less of the tissues around, has a deep red areola which assumes a bluish tint after awhile: the “core” is single, and the pain is less severe. Anthrax is less prominent, it is deeper, involves more tissue, is much darker in colour, possesses many “cores,” and is accompanied by greater pain. But the differences are in degree, not in kind, of tissue involved. I will first give the general features of furunculus and anthrax, and then comment on their pathologies and therapeutics together.

FURUNCULUS, OR BOIL.

The general symptoms are as follows in some cases:—Febrile disturbance, rigors, loss of appetite, headache, and disordered bowels. Locally, a little red lump, the size of a split pea, makes its appearance: it is tender, painful, and tense, and soon becomes indurated. The disease is felt to be pretty deep: a red blush surrounds the base of the swelling, and changes from bright red to purple. In from three to six days the apex of the boil becomes yellow from the formation of pus: the pain is now throbbing, the induration of the tissues at the base augments, and so does the amount of pus in the centre of the pustule. If left to itself, the “pustule” bursts, and presently “the core” comes away. After this has happened, healthy granulations at once spring up, and repair is quickly completed. In some boils the suppurative stage is scarcely reached, and such are named *blind boils*. Furunculus generally attacks the neck, buttocks, arms, especially in young people, and there are successive crops of pustules, so that the disease often lasts a considerable time. The glands may be enlarged. The pain is severe in boils that occur in parts that are dense and cannot swell, as in the meatus of the ear and the pudendum, or those that are freely supplied with nerves, as the face.

HORDEOLUM, OR STY,

Is a small boil seated at the edge of the eyelids and involving a Meibomian gland. It is not an active kind of boil, but progresses sluggishly, the pustular centre being small. It is painful, and some time lapses before all traces of its existence go. There may be one, two, or more, on one or both eyelids.

ANTHRAX, OR CARBUNCLE,

Is a multiple furuncle. It arises as a hot, hard swelling, not so conical as that of the boil—more indurated, however, the cellular tissue around being much more extensively implicated; its colour is dusky, the sensation burning, dull, throbbing; the carbuncle varies in size, the swelling becomes "brawny," from the meshes of the cellular tissue becoming filled with a plastic lymph. The next step is the formation of a *quasi*-abscess; the central part of the swelling softens, and feels boggy; the skin becomes thin over the surface, and at several points openings occur, through which slowly issues more or less sanious pus; and the little holes are seen to be plugged up by small white cores, which presently loosen and come away; the apertures are red and papillated, the edges indurated and everted, particularly when several openings coalesce, so as to form one or more large openings. Gangrene may set in. The healing process is often indolent, the parts remaining undermined, brawny, dusky, shreddy, and also sloughy. Carbuncles are generally solitary. The patient, if the attack be severe, gets into a very depressed state. The posterior aspect of elderly people is the selective seat of carbuncle.

Morbid Anatomy.—A careful study of the changes that go on in the skin in carbuncles and boils is much wanted. The anatomical seat of boils is supposed to be the deeper part of the cutis, but it seems to me likely that it is essentially the follicles and their attached sebaceous glands. In some cases one can very clearly make out the opening of the follicle in the centre of furunculi, especially when the boil is beginning to form, as in the case of hordeolum or sty, and it is only fair to M. Denucé,* of Bordeaux, to state that he has insisted that the real seat of boils is the sebaceous glands. Some authorities (Neumann)† make two seats—the one the hair follicle and the other the cellular tissue. In the latter case the boil is regarded as a diffuse inflammation of the cellular tissue. It may be as Neumann says, but still there is reason to think that the original seat of mischief is the portion of the follicle about the sebaceous glands. Rindfleisch remarks that wherever he has had an opportunity of examining the "core" of a boil he has always found in it the connective tissue which forms the bed of the hair follicle. But he does not say that the disease starts in the deep part of the follicle. In boils of large size the connective tissue beneath the cutis is involved. Some suppose that in one particular region the infiltration by cells and pus is so great that the blood vessels are compressed, and the infiltrated part is cut off and separated from the adjoining connective tissue, and cast off as the core, which is composed of connective tissue and broken-up cells and débris. But it is not at all unlikely I think that the core may be a sebaceous gland with attached connective tissue. The glands have become pressed upon, strangulated, and more or less dead or sloughy. Now it seems that in anthrax there are many "cores," the cellular tissue is implicated to a greater extent, and sloughing also freely occurs. In comparing together acne, ecthyma, and furunculus, some analogy between them is noticed. M. Denueć thinks that acne is constituted by hyper-secretion and induration, ecthyma by suppuration of the gland and suffusion of pus under the epidermis which surrounds its outlet, and furuncle is a mortification and elimination of the gland itself; in fact, that in acne there is plastic, in ecthyma suppurative, and in furuncle gangrenous inflammation. Of furuncle he thinks there are three kinds—simple, phlegmonous, and gangrenous. In the first the gland mortifies and comes away as the *core,* in the second the cellular tissue is involved, and in the third the central part mortifies *en masse.* If furuncle be confluent, anthrax is produced. I confess I fail to see the essential difference between ecthyma and furunculus. Ecthyma seems to me to be more superficial, whilst no true core is formed. But acne is different. I think that in acne the inflammation is secondary to retention of sebum, whereas the causes of ecthyma and furunculi are different.

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* Des Formes Malignes du Furuncle et de l'Anthrax, par le Dr. Denucé. (Rapport Congrès Médicale de France, 3^{e} session, tenu à Bordeaux, 1866.)

† Handbook of Skin Diseases.

Pathogeny of Boils, &c.—The popular belief is that the "core" is the result of a circumscribed gangrene, and many think this is the result of a "bad state of blood," or a "debilitated condition of the constitution." But there is this to be said in regard to boils as a rule, that as soon as the "core" is away, the wound left heals readily and perfectly. Now if the "core" is produced by a bad state of general nutrition, leading to gangrene or local sloughing, how comes it that the healing of the wound, left after the discharge of the core, is so vigorously carried on in the face of such a state of health? This doctrine of the mode of production of the core supposes that there are two actions of diametrically opposite characters—a gangrenous and a vigorously reparative one—going on side by side in the same patient. If the primary death resulting in "the core" were due to a tendency to gangrene in the system, why should there be present in the same subject and in the same part a thoroughly satisfactory process of repair? What, indeed, is there in the clinical history of boils, or the condition of patients affected by them, to account for the spontaneous death of a piece of cellular tissue? If "the core" be regarded as an exudation, no analogy exists in support of such a proposition. It is clear that the only satisfactory explanation is that which recognises that some disorder in the circulation of the part first takes place, that the tissues fail to be properly nourished, to perform their functions, and then die (slough), and that an attempt is made by suppuration to get rid of the moribund or useless tissue. If it can be shown that the sebaceous glands, in the performance of their emunctory act, are disordered by effete matter with which the blood is charged; that they are then congested and inflamed, then suppurate and die, and with the contiguous cellular tissue form "the core," it can be readily understood how it can come to pass that healthy reparative action is at once set agoing after the dead tissue comes away, and further, it is easy to comprehend how it is that friction and irritants of all kinds determine the seat and occurrence of boils in those who are predisposed to them. A blind boil according to this theory is an inflamed sebaceous gland, which happens to recover itself before the stage of suppuration has been reached.

Boils occur where glands are large, where the skin is tough, and liable to be injured—ex., the back of the neck, shoulders, and the outer side of the limbs, and the boil varies in character and degree, according to the depth of the cellular tissue around the gland involved, and the state of the blood; boils are large and severe in debility after convalescence, in diabetes, albuminuria, and the like; small and painful in young and plethoric subjects. If boils are the result of an inflammatory state of the skin glands and adjacent cellular tissue, their occurrence in full-blooded and apparently healthy persons is explained by the action of a state of the blood overcharged with the waste products of the body.

In carbuncles there are similar changes to those in boils, but a much severer degree of disease. Here a group of sebaceous glands is involved, and in consequence of the more cachectic state of the nutrition the reparative attempt is less perfect, the inflammation is of a lower type, and the cellular tissue sloughs and dies to a much greater extent. The nutrition is not only unequal to prevent the local disorder, but also incapable of putting repair in proper operation; and there is one disposition in carbuncular subjects that perhaps has a peculiar influence in disposing to sloughing and gangrene of the cellular tissue: this is the tendency to, or an actual, diabetic habit. This has been exemplified of late by many observers—Prout, Goolden, Landouzy, Wagner, De Calvi, Fonseca, Menestrel, Küchenmeister, and others. Anthrax is very common in Pernambuco, and Fonseca finds it connected with diabetes, or a diabetic tendency. Sugar occurs in the pus of the carbuncle, and it is a curious fact—so it is stated—that when anthrax develops, the sugar is diminished or disappears from the urine. M. Verneuil* not long since corroborated Wagner's observation relative to the occurrence of phlegmonous and gangrenous inflammation in diabetics in certain cases of gangrene of the lower limb occurring in connexion with saccharine urine.

But I have entirely omitted to show that boils occur under conditions in which the blood is impurified or surcharged with effete products, which, by circulating through the skin, may irritate or inflame the glands. In summing up the conditions under which boils occur, it will not be difficult to classify the main ones as follows:—(1) during seasonal changes in spring and summer; (2) from eating diseased meat (frozen); (3) when any special alteration is made in the ordinary habits and economy of the body, as in the training of prizefighters; (4) from the influence of cadaveric poisons; (5) from sudden change of diet; (6) after fatigue of long duration; (7) during convalescence from debilitating diseases; (8) as a consequence of the action of septic poisons, as in fevers, &c.; (9) in albuminuria; (10) in the diabetic habit; (11) during adolescence, and in the first stage of manhood. In most of these cases there are "debility" and an overloaded state of system—ex., the circulation of urea, of sugar, of septic poison, or of effete matter which is plentiful during convalescence; and it only needs the action of some local irritant to determine the development of furunculi in the parts to which that irritant is applied.

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* L'Union Médicale, Dec. 1, 1866.

Diagnosis of Boils and Carbuncles.—No error can possibly be made in respect of these two diseases; in the former the hard, deeply-seated induration, the pain, the central suppuration, and the "core," are distinctive. The manifold openings, the boggy feel, the sloughing, the grumous discharge, and the implication of the cellular tissue in carbuncle are very peculiar. Furunculi are sometimes epidemic.

Treatment.—If the view I have given of the nature of boils be correct, then it is not difficult to lay down a satisfactory plan upon which to base their treatment. Boils are accidents common to many conditions, but produced in all of them from a similar cause—viz., a disordered blood condition, with nutritive debility and deficient elimination in subjects whose tone is lowered. First, with regard to boils. There is always deficient elimination in connexion with them; it may be in a young and naturally vigorous youth who is rapidly growing, and is perhaps hard worked, and who does not get quite the right food he needs. If the disease assumes what may be fairly called a sthenic form, here saline aperients and a modified diet suffice; but where there is marked want of tone, in such a case sulphate of magnesia, infusion of roses, and quinine at first, and then cod-liver oil, are the proper remedies internally. Again, in those who are breathing a vitiated atmosphere—in the dissecting-room, for example—change of air, quinine, aperients, and rest, soon improve the general condition; or bark and chlorate of potash, with the mineral acids, are equally good medicines. In the case of individuals of mature age but good average nutrition, if the emunctory functions are disordered, it is necessary to aid elimination and to tone. If the urine be loaded and the bowels irregular, the combination of acetate or bicarbonate of potash with ammonia, followed by calumba and an alkali, are advisable. If there be a gouty diathesis even colchicum or iodide of potassium are called for, with *tonics.* In the case of boils occurring during convalescence from febrile diseases, there is still the removal of waste products to attend to, and the necessity for tonics at the same time. These remarks mainly refer to young persons. But boils trouble middle-aged and elderly folk. In some instances one has to deal with careworn and anxious men and women, who have a pretty hard struggle to maintain their position, and a good many mouths to fill at home, and who are yet essentially healthy and sanguine subjects. The diet of these persons has been deficient; it requires to be not only more ample, but more varied, if possible. Here again aperient tonics seem to me to be indicated, and I believe that opiates (the watery extract) freely given, if there be much nervous excitability, will lull the patient, both as regards his pain and his depression. Then it is of prime moment that we are sure that our patient's gall-bladder is properly emptied. In some instances of over-worked middle-aged persons, the sallow complexion, the almost actual icterus, the loaded urine, flatulent dyspepsia, and want of tone, point mainly to a congested and inactive liver as the source of mischief. Such a case demands podophyllin in repeated doses, the nitro-hydrochloric acid internally with nux vomica, and the careful regulation of the diet, together with the avoidance of saccharine matter, pastry, and malt liquors. In young women who are naturally of good constitution, and who get somewhat anæmiated, or have their menstrual functions disordered, boils are often seen about the armpits. In such cases aloetics and quinine with iron, moderate exercise in the open air, and plain food, are called for. In all cases fresh air, abstinence from work if this be needed, and frequent ablution, should be prominent items in the treatment.

With regard to local treatment, in the vast majority of cases boils always run on to suppuration, and the object to be attained is the removal as quickly as possible of the "core," or dead tissue, whilst the general blood condition must be improved. In the slighter forms, which will probably "subside," emollients may be applied—lead lotion, warm applications, poppy-head fomentations: or pressure may be made by means of soap-plaster, by which means boils are helped to abort: or aperients and diuretics given, if need be with tonics, to prevent their formation. In the more decided forms suppuration should be encouraged as well as the evulsion of the dead tissue, and the healing of the ulcer subsequently left. It is also necessary to allay pain. Poulticing must first be had recourse to: then prevention of local irritation by proper protection, *resting* the affected part if this is possible, are other means generally employed, as everybody knows; but though practitioners know this, they do not appreciate the contingent fact that, inasmuch as local irritation of all kinds determines the occurrence of boils, local remedies, such as poulticing and the like, should be confined as much as possible to the exact seat of local inflammation. Nothing is more common than the springing up of fresh around old boils from the neglect of this precaution. When suppuration has actually set in, then it is necessary to hasten the maturation and exit of "the core" by the application around its indicated locality of potassa fusa or acid nitrate of mercury. When the "core" has come away, any simple astringent dressing does—ex., nitric acid lotion, with or without opium. The real disease in fact is over, and nature quickly repairs the damage done. Special general and local treatments may be required to tone up the system and to prevent a repetition of mischief.

With regard to the treatment of carbuncles, the same line of procedure holds good; only the constitutional condition is one of more serious character. The local mischief is therefore severer and more extensive, the suppuration is less healthy, and a large extent of tissue dies. It is thought that several glands perish, forming so many "cores," but their surrounding cellular tissue is specially involved in the death or slough; the reparative circumscribing action is not so manifest, the healing is not so rapid or perfect, and serious results are more common. The general indications are clear—the combating of gouty tendencies, and the stimulation of the liver and kidneys at first, with the restriction of the diet to plain animal food: and large doses of quinine with opium—the latter if there be any decided diabetic tendency or much nervous prostration—the whole tempered with the aid of more or less stimulation, good nursing, and the freest support, as the case may need, are at the same time called for.

Now all know that if the patient is tolerably strong and has no organic disease, the carbuncle itself will slough out, and reparative action quickly follow. Such a case gives no anxiety, but one may materially aid the cure and moderate inflammatory action, by aperients, by diuretics, by opiates, or by tonics. In some cases the patient's strength *may* fail at an early period, and here what would be inadmissible in another—port wine, plenty of strong beef-tea, and full doses of bark and ammonia—are the proper remedies. With regard to local measures it is also clear that the sooner the carbuncle is "ripe" and the dead tissue away the better; thereby the sooner the pain and its effects on the body generally are lessened, and the sooner nature can commence repair. To this end one needs to keep out the blood from the tumour, and to destroy artificially the part that will die; taking measures, by internal medicines, to bring the blood back as quickly as possible to a condition of health. And so, locally, pressure by strips of soap-plaster may be employed; but if this does not seem to succeed, and there are serious tension and pain, the swelling must be incised. The incision should be subcutaneous, crucial or single, as the case may be.

Surgeons are mostly in favour now-a-days of pressure, and afterwards caustic applications, with poultices to hasten the softening up of the carbuncular swelling; pain being met by opium once or twice a day. When the process of repair is approached, stimulating applications are needed; the best perhaps is some Friar's balsam, a drachm, say, rubbed up with an ounce of lard, or a carbolic acid ointment. M. Soulé, of Bordeaux, has suggested that Vienna paste be applied early, and an incision be made the next day : this prevents the presence of a wound that can absorb from without into the veins, whilst the dead tissues are the more readily removed; after the incision, the wound is to be dressed with tincture of iodine more or less diluted. But the pressure plan of treatment is the better.

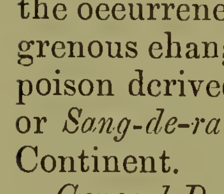
In both boil and carbuncle a certain part has to die and come away. The sooner this occurs the better, and therefore I think that caustics are the best remedies, incisions being employed to relieve such tension as cannot be prevented by pressure.

PUSTULA MALIGNA, OR MALIGNANT PUSTULE.

Within the last few years very definite facts have been obtained in regard to malignant pustule. The disease is characterized by the occurrence of a boil-like inflammation, accompanied by gangrenous changes, and produced by the contact of a certain animal poison derived from beasts affected with the disease called charbon, or *Sang-de-rate,* which has prevailed from time immemorial on the Continent.

General Description.—The disease varies in severity according to the amount of tissue involved, the degree of gangrene, and the occurrence of secondary pyæmic results. It attacks the exposed parts of those who come in contact with the hides or secretions of diseased animals; therefore the face, and neck, and hands, are the chief seats of the disease. It commences as a vesication on these parts, accompanied by induration, an inflammatory blush of dusky hue, and filled with sero-sanguinolent fluid. Dr. Stone, of Walpole, U.S.A., gives the accompanying representation of the early appearance of the disease. He says, that at first there is a solitary serous vesicle, which has an inflamed areola; the vesicle gives place to an eschar bordered by a ring of vesicles as seen in figure (19), and seated on a hard indurated base. It seems that at the outset there are considerable itching, heat, and burning; then the vesicle appears whilst the central part blackens and then forms a gangrenous eschar. In severe cases a large surface becomes rapidly gangrenous. When this stage is reached, constitutional symptoms of a typhoid nature develop, and these correspond in severity to the local changes. They follow the local symptoms, and are produced by absorption of poison from the gangrenous part. If death occur, it arises from pyæmic conditions, induced from the fourth to the eighth

Fig. 19.



day. But the gangrene may be arrested, when the subsequent progress of the case is that of anthrax. Malignant pustule is at first a local disease. Numerous bacteria have been found in the blood, but it is not certain what influence, if any, these possess in the causation of the disease, or whether they are accidental and secondary to the blood changes.

The cause of malignant pustule is as stated, the contact of an animal virus derived from animals affected with "charbon." Dr. Richaud, quoted by M. Raimbert (of Chateaudun),* has observed the disease largely since 1830, and he now asserts that it occurs in those who touch the dead carcasses of "charbon" animals, are in constant contact with beasts, or are stung by flies that have feasted on the former. The disease is very common in the plains about the Alps from May to October, when the sheep in their peregrinations die plentifully on the road, and the disease attacks those who reside near the line of the passage of the flocks. The disease may also be got by direct inoculation—as in butchers, herdsmen, drovers—from contact with hides or tainted hair of diseased beasts, and, it is said, by eating the flesh of the latter.

In a late number of the *American Journal of Medical Sciences*, is a paper by Dr. A. H. Smith, on malignant pustule, as it appeared in the vicinity of Las Cruces, New Mexico, in 1865. During the summer of that year an epidemic resembling "charbon" or the malignant pustule of surgical writers, occurred. It commenced as a papule of a livid or purple colour—hence the Spanish designation "grano negro;" and at the earliest stage the tissues round about could be felt to be indurated to a considerable extent and depth, and distinctly creaked on being incised. The section had the appearance of dense fibrous texture, containing in the meshes dark pigment. The boundary was abrupt and well-defined; little blood flowed from it, and the sensation of the part was less than that of the skin around. In from seven hours to two days the papule became like the vaccine pustule, only livid or black, and erysipelatous redness extended around it, spreading oftentimes with great rapidity. The pustule and the swelling around steadily increased, as the rule. In some cases the former was stationary, the latter very active; the cuticle was then raised by effusion and blebbed, and sloughing ensued; the pain was burning, but only in exceptional cases severe. The constitutional symptoms seemed to bear an exact ratio to the extent of the local mischief; the breath was offensive; the tongue moist and coated; the pulse quick and strong, becoming small and frequent; and the skin relaxed and clammy after a while. The only one whom Dr. S. saw die was comatose. Great difference existed in the extent of the disease: in some only a small spot was present, the size of a split-pea, made up of a little redness, and in a day or two the patient was well. In favourable cases the disc of dead tissue in the centre sloughed, leaving a healthy granulating surface behind.

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* De la Spontanéité des Maladies Charbonneuses chez l'Homme.

Dr. Smith says: "A careful inquiry enabled me to trace it to infection from diseased animals." A distemper prevailed at the time to a slight extent amongst cattle, and was described by the Mexican rancheros to Dr. Smith. "The fact that in every instance the pustule occurred in a part of the body not protected by clothing goes far to confirm the view of the disease, that it is not in any degree the local manifestation of a constitutional infection, but always the result of direct LOCAL INOCULATION." He gives the following instance:—"Two men were engaged in skinning an animal which had died of the distemper. One of them had a pimple on the face which he had scratched with his nails until it bled. The other had received a scratch in the face from a thorn in passing through the chaparal. The day was extremely warm, and the men frequently wiped the perspiration from their faces with their hands, covered as they were with the fluid from the animal. In a few hours pustules were developed upon the abraded surfaces in both individuals. The disease proved fatal in one (which I did not see), and the other recovered with a considerable loss of tissue from the cheek." Dr. Smith says it is impossible to say if simply eating the diseased meat sufficed to give the disease, although many people declared they had not touched the meat. One case appeared after handling dry hides.

In one case a woman was attacked. She had eaten with the rest of the family of a goat that got the distemper, but which was killed "for fear it should die." Several ate the flesh, but this woman alone was attacked, and she *had prepared the goat for the table.*

The idea that the poison of the disease is conveyed by flies who inoculate it into healthy persons is supported by the observations of MM. Raimbert* and Davaine.†

It is said that bacteria are the essential cause of malignant pustules. The matter is involved in obscurity, but this is a question that I shall not enter into now.

The Treatment consists, essentially, in fully destroying at the earliest possible moment the eschar or vesicating part by caustic (potassa fusa), subsequently incising, applying charcoal poultices, with chlorinated soda washes, and giving internally a cathartic; followed by free doses of tincture of steel, carbonate of ammonia, and brandy, with generous diet.

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* Récherches Expérimentales par la Transmission du Charbon par les Mouches ("Comptes Rendus de l'Institut," 1869).

† Étude sur la Contagion du Charbon chez les Animaux Domestiques. (Bulletin de l'Acad. de Méd. et Gazette Hebdom., 1870.)

DELHI BOIL, ALEPPO EVIL, AND BISKRA BOUTON.

I propose to deal in this place with three diseases endemic in India, at Aleppo, and in Algeria, respectively, whose pathological position is at present uncertain, but which are believed to be allied in many particulars to anthrax. These three affections certainly all bear a close resemblance the one to the other, and it is thought that they are the same in nature. Compared with anthrax they are very chronic; they are at first papular, then suppurate, and finally ulcerate.

The Aleppo evil, Biskra bouton, and Delhi boil will be noticed under this head in separate sections, and I shall then make some special comments on the whole of them.

DELHI BOIL.

Syn. Aurungzebe, after the monarch of that name, who suffered from the disease; or Bulkea, from Bulk, a place where it is said to arise from inoculation by a certain black gnat.

The attention of Indian medical officers has been frequently directed of late to Delhi boil. The name Delhi boil is to some extent an unfortunate one, inasmuch as the disease is not peculiar to, though perhaps most prevalent at Delhi, but is known to occur in many localities in different parts of the East—at Garzebad on the Meerut or left side of the Jumna about nineteen miles from Delhi and adjoining villages; at Jeypore, Seinde, Lahore, Moultan, Agra, Aden, Meerut, Roorkee, and Umballa. The disease first attracted special attention when the city of Delhi was garrisoned by our troops, and it was noticed that only those had it who, with their families and the camp-followers, did duty within the city walls. The so-called Lahore, and possibly the Seinde boils, though there is doubt on the point to be presently noted as regards the latter, the Moultan sores, probably the Aleppo evil, and the Biskra bouton (Algeria), are it would seem the same disease. It would not, however, be well to change these names before being quite convinced that these several diseases are of the same nature, and more light is thrown upon their pathology and cause by further investigation. Some such term as Oriental sore or pustule might then be employed to designate the disease as it occurs in various parts of the world. The word Delhi sore is, however, preferable to Delhi boil. Delhi sore is not dangerous, but intractable, and it attacks new-comers especially.

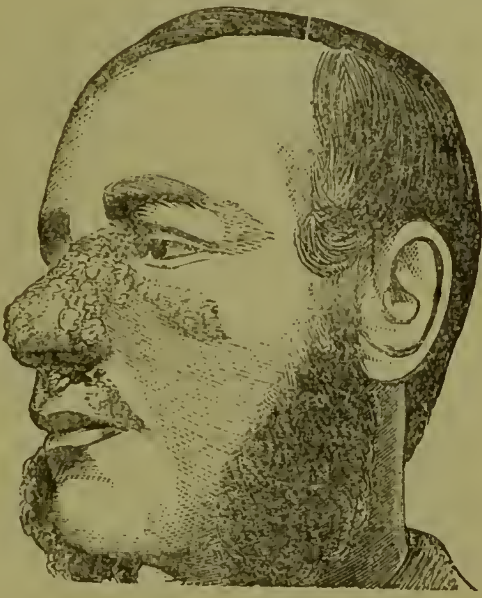
Typical Characters and Course of the Disease known as "Delhi Boil."—The disease has been described as commencing by itching, followed by the development of a reddish spot, in the centre of which appears a papule or two, giving rise to the aspect of a wart, or as it has been described, "a small hard pimple, which, when first seen has desquamating epithelial scales on its top." Dr. Fleming (*Army Medical Report*, 1869) depicts the original appearance as resembling "a musquito bite, with the skin slightly elevated; on examination a number of blood-vessels are seen radiating to the centre of this little red spot, which gradually enlarges without any pain, throws off its epithelium, becomes smooth and flat on the surface, assumes a shining appearance and a relative degree of transparency. The growth slowly increases in size and often spreads irregularly to a considerable distance from the centre by little ridges of smooth skin, and it would appear to attack the roots of the hair and sheath first whilst it is extending. The growth or any of its prolongations, pits on pressure and causes a stinging sensation, contrasting with the healthy skin around." Others have described the enlargement of the original spot to be in part produced by the development of new papules around the original one, these papules being seated at the hair follicles. These new spots coalescing with the original one and themselves, and producing, as above described, an inflamed, brownish-looking, shining induration. When matters have advanced thus far, ulceration is imminent, and the surface may be seen to be studded over with deeply seated yellowish-white points, which have been regarded as points of suppuration, and ova, but are in reality altered and inflamed hair and gland sacs. Presently a scab forms by the aggregation of epithelial scales and a certain amount of ichor discharged from the soft centre of the tumour, and then ulceration begins beneath the scab, especially if the "boil" is irritated. There is some slight variation described by observers in the early condition of the boil; for example, it is said that before the scabbing takes place the papule may suppurate or give place to a small abscess, and this one can easily understand. What is always found present is the ulceration going on beneath a crusted pustule. As before observed, the discharge and crusting rapidly augment with irritation. The sore itself is surrounded by a zone of redness, and new papules develop around it, whilst the sore enlarges by ulceration, is very indolent, and fails to show for a long time any tendency to heal. In some cases the disease is altogether of a less marked kind than I have now described—there is no suppuration, less ulceration, and scarcely a cicatrix left behind after cure. The ulcerated surface itself, when present, is red, flabby, and irregular, being studded over by fungoid granulations that bled freely. The surface of the ulcer discharges a thin ichor, and it is painful. Its edges are hard.

Dr. Fleming (*Indian Medical Gazette*, Nov. 1869) particularly calls attention to the fact that during the growth of the tumour and up to the period when ulceration begins, and when the "boil" is relatively transparent and shiny, the small yellowish or yellowish-white bodies before referred to as present, may be detected with a lens. If these be cut out they will be found to be altered hair sacs, and they will sometimes come away attached to scabs which are forcibly detached (See Dr. Cleghorn, Medical

History of the Bengal Native Army for 1868," by Surgeon-Major Ross. Also fig. 25.)

As the ulceration advances, signs of healing usually show themselves in the centre of the original seat of disease, and cicatricial tissue springing up gradually spreads farther and farther outwards as the ulceration extends, and the sore finally heals after two or more months, a scar remaining. The general health does not materially suffer. The most common seats of the sore are the exposed parts —ex., the back of the elbow, forearms, backs of the hands and fingers, ankles, face, legs, thighs, and near the scalp. The sore rarely attacks unexposed parts.

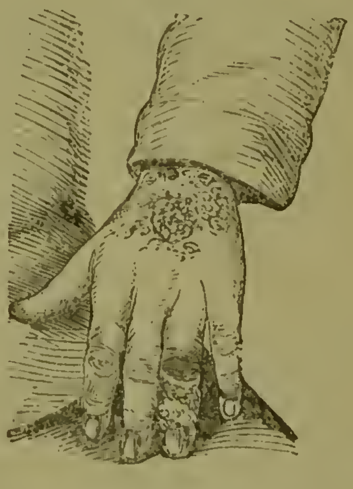
FIG. 20.



I am enabled to give the two following sketches of the disease from photographs of Deputy-Inspector-General Dr. Murray, of the Indian Service, which were given in the *Lancet* a little while since. See figs. 20 and 21.

Morbid Anatomy.—Some interesting observations have lately been made by Surgeon-Major Smith (*Army Med. Rep.* 1868, vol. x.) and Dr. Fleming (*Army Med. Rep.* 1869), as to the microscopic characters of the tumours and ulcers of Delhi sore. The former made out the presence of "a large number of peculiar bodies, varying in shape from an elongated oval to that of a kidney or crescent-form." These were of a dark chocolate-brown colour as seen by transmitted, and of a bright orange red as viewed by reflected light. Their average size was probably equal in length to five or six blood discs by about two and a half to three in width. They had distinct cell walls and were filled with minute dark granules, and varied much in transparency. They abounded not only in the discharges but all over the skin. Other cells were found in the discharge from open ulcers like *distomata*, full of granules in some cases, and in others having one end transparent, as though "being thinned by protrusion and consequent tension at the moment when the spot was first distinctly visible." On one occasion a curious animalcule was believed to have been discovered in the boil. The cellular bodies, as represented by Surgeon-Major Smith, are seen in fig. 22.

FIG. 21.



These bodies are probably the ova of distomata from impure water, according to Prof. Aitken, but it is not unlikely that some may be altered epithelial growths pigmented more than usual. They do not appear to have been generally observed.

Dr. Fleming has more recently done much to throw light upon the nature of the diseased processes in Delhi boil. When a section is made of the tumour before ulceration has commenced, the normal structures are found to be replaced by a fibro-cellular tissue, enclosing in its interstices a large number of cells in masses, the sebaceous glands and sweat glands being destroyed, as well as the papillary layer of the skin. The cells make up the chief part of the boil at this time—*i.e.*, before ulceration has commenced. They are seen in the accompanying figure 23, acted upon by acetic acid. They are oval or roundish, yellowish brown, the cell wall being soon destroyed by pressure, and they contain two or more nuclei. The cells are regarded by Dr. Fleming as the essential and peculiar growth of Delhi boil. But then there are very curious changes in the hairs. They appear to be the seat of cystic formations. The epithelial layer is so arranged as to give rise to an appearance of a fibrous envelope, and this encloses a finely granular matter (see fig. 24). Representations of the altered hair-balls referred to by Dr. Fleming are given in fig. 25.

Fig. 22.

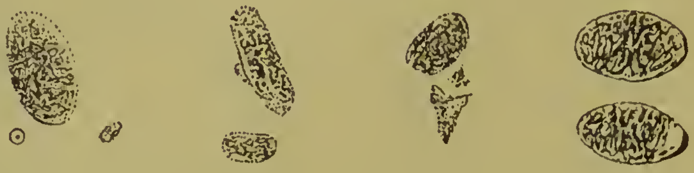
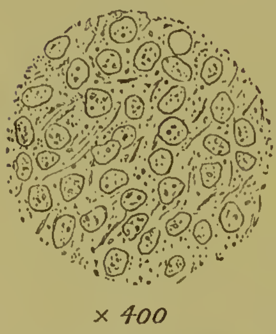
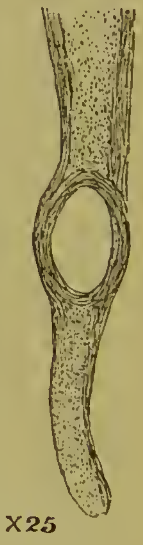


Fig. 23.



The appearances seen in section before ulceration of the tumour.

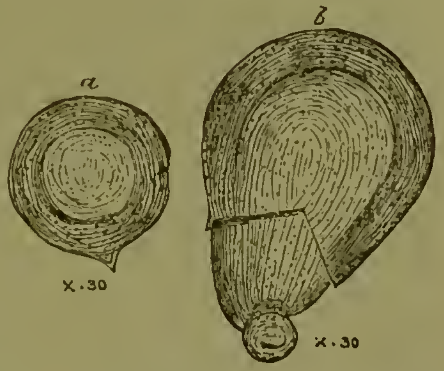
Fig. 24.



Pathology.—In commenting upon these appearances I would be understood as offering suggestions for the guidance of future inquirers. What is there, it may be asked, inconsistent with the idea that the cell growth is but a proliferation of the connective-tissue corpuscles, an arrest in their growth, which gives rise to the formation of a kind of granulation tissue, which presently degenerates to a greater or less extent into pus? for the cells have the appearance of pus cells in many cases, so far as their characters are portrayed by Dr. Fleming in his drawings. One can easily understand that such a change may be induced in the tissue of the cutis as the result of impaired nutrition. The so-called cystic formations in the hair are evidently due to immaturity of the cells that form the pith, the cortical part being less abundant than usual, a condition seen in other cases where the nutrition of the body is much interfered with, as for instance in syphilis.

It would appear to be a very important point to distinguish clearly, as a means of throwing light upon the true pathology of the disease, between the microscopic appearances observed *before* and *after* ulceration has occurred. There can be little doubt that after ulceration has occurred, and under the peculiar circumstances met with in India, ova fungi and other foreign bodies may readily be conveyed, by means of impure water and the like, to open sores, and so be found in the discharges therefrom, and it would only be the fact of finding these bodies or organisms in the tumours before they ulcerate that could be worth a moment's notice in proof of their being the cause of the disease. The finding ova and the like in the discharge of Delhi sores shows, as matters at present stand, nothing more than that these have probably gained access from without to the discharging surface. But Dr. Fleming's researches help us greatly upon the point in question. He gives us the characters of the tumour—a new granulation tissue—before there is any ulceration, and he shows that the new cell growth or tissue, if inoculated, will reproduce the disease. But if the cells were pus cells this might be explained by their possessing specific contagious properties, as in the case of gonorrhœal or syphilitic pus. The pus, however, from the Delhi boil will not, if inoculated, induce the disease; there must be with it some of the cell growth described by Dr. Fleming. But after all, the latter may be an early stage of pus, and it may be that in syphilis the inoculable material is not actual pus, but granulation tissue, which is present in chancres and syphilitic ulcers.

Fig. 25.



Altered hair sacs extracted from "Delhi Sores."

But before I proceed to enter upon the question of the causation of the disease, it is desirable to describe briefly the general features of Aleppo evil and Biskra bouton.

ALEPPO EVIL.

The Aleppo evil, or button, is probably the same thing as the last described disease. It is endemic about the Tigris and Euphrates, at Aleppo, Bagdad, and Bussorah: it is met with at all ages, and attacks both natives and strangers, the latter after a short residence. It is like the Delhi boil, confined to the cities, and occurs once in a lifetime. It begins as a papule, which pustulates in two or three months, and scabs over whilst ulceration goes on beneath the crust to the extent of from a quarter to two or three inches, having like characters to those of Delhi boil. After a year or so the ulcers heal, leaving indelible cicatrices. At Aleppo the disease is ascribed to bad water. Where there is one tumour it is said to be the male, if a tumour is surrounded by several smaller ones it is called the female. The disease is painless; it never kills, and is indolent in its course.

BISKRA BOUTON, OR BISKRA BUTTON,

is called also bouton des Zibans, because of its occurrence in the oasis of Zab, and by the Arabs simply *habb*.

The following account of what appears to be the same disease as Delhi boil is given by Deputy-Inspector Dr. Paynter,* and it will be noticed that he refers to its similarity to an anthrax:— "We find, in the southern part of the province of Constantine, about 160 miles south of the sea-coast, at a military station with a considerable civil population of European colonists as well as natives, an endemic disease, so common that it is called the 'Biskra button,' from the circumstance of its prevalence at and around Biskra, the first station in the desert. It is, however, not peculiar to this part of Algeria, for it is also found at Tougort, Ouargla, and Tlemcen, and is, probably, to be met with in all parts of the desert. It is also seen in parts of the neighbouring kingdom of Morocco. This singular disease attacks its victims during the months of September, October, and November, at the end of the great heats of summer. Consequently, I had not an opportunity of seeing it in its first stage; but, from the description given of it, it appears to commence with an itching sensation, long before any appearance is appreciable on the skin. After a time, a small tubercle is perceived about the size of a very small pea, located, very superficially, in the layers of the skin and subcutaneous tissue; remaining stationary for some days, or even weeks, and causing little inconvenience; at length it enlarges, the epidermis scales off; and, shortly, a small ulcer appears, which discharges a sero-purulent fluid. Seen by myself during the month of February in its chronic stage, it presents precisely what I may describe as a small superficial anthrax. Differing in diameter from one to two or three inches, these patches present the appearance I have alluded to; and when pressed, a thick purulent secretion oozes out through several openings. There were a few cases in the military hospital at Biskra at the period of my visit; and with the exception of being inconvenient, disagreeable, and unsightly, did not appear to give any particular pain, or cause any constitutional derangement. This eruption appears most frequently on the legs, fore-arms, dorsum of feet or backs of hands; on the nose, cheeks, and ears; varying from one or two spots to a dozen, or even more. The affection lasts from four to eight months as a general rule; oftentimes for a year, a year and a half, and occasionally for a longer period. Whatever the period may be, the appearance when cured, or cicatrizing of itself, as it does if left without treatment, is that of the cicatrix after a burn. The disease attacks natives, Europeans, all sexes and all ages; and occasionally relapses are met with (*i.e.*, one attack not rendering the person free from a second invasion). Of the cause of this affection little is known. Bad water, heat, dirt, &c., have all been named; however, these are very prevalent in other regions where nothing like this singular disease is seen. It has been met with in the horse in some of those regions where the human race is liable to its attacks; but not, I believe, in the dog. It is said not to be contagious. The cause of the affection not having been settled, its treatment is of course not very defined. Thorough change of air possibly shortens the time required for its cure, and is probably the best remedy. This disease partakes of most of the characters of the Aleppo button." Dr. Bertherand* proposes to call the disease Chancre du Sahara, on account of its characters and its occurrence principally about the Sahara. His account of the disease agrees with that of Dr. Paynter, and he thinks it is due to the action on the body of climatic influences.

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* Army Medical Reports for 1867, at p. 438.

Now in comparing Delhi boil, Biskra bouton, and the Aleppo evil together, certain analogies are recognised. In the first place, they all attack the exposed parts—ex., the backs of the hands, the uncovered arms and legs, the backs of the feet, the nose, cheeks, and ears, &c. They all last about the same time, from several months to a year, or a little more. They similarly attack all ranks, ages, and classes, but especially new-comers, after a three or four months' residence; they all leave cicatrices, and so on. The Delhi boil attacks dogs, but this has not been stated of the Biskra bouton nor of the Aleppo evil, though horses are attacked by the Biskra bouton. However, the inter-relationship of these diseases is a matter that requires investigation. Delhi boil and Biskra bouton seem to be especially prevalent after rains. In each disease the general health does not suffer greatly, if at all, and the three diseases are known to have oftentimes a long period of incubation. They break out now and then a long time even after the removal of the patient from the places where the diseases are endemic.

[It may be here stated, in reference to the observation that Scinde boil is probably Delhi boil, that Dr. Farquhar's experience leads him to conclude that the ordinary Scinde boil is very different from Delhi boil. There may be the Delhi boil in Scinde, he allows, but the Scinde boil is, according to his opinion, a true "furunculus," a severe form of the boils that are so very frequent in the rainy season all over India. These boils are seldom met with till after the first fall of rain, and are in many places believed to be connected with the eating of mangoes. This supposition is apparently, however, a mistake, and arises from the fact of mangoes getting ripe and fit for eating just after the first fall of rain. Dr. Farquhar has seen these "rain boils" occur as frequently in districts of India where no mangoes were to be had as where they are plentiful. The boils appear to be of a malarious origin, their strange frequency in the legs being explicable probably by the dependent position rendering the circulation torpid.

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* Notice sur Chancre du Sahara.

Europeans suffer more than natives from these boils, which are sometimes very trying to the general health from the pain they occasion. The inflammation will sometimes cover half the leg below the knee, and the induration be as large as a crownpiece. At other times these boils are about the size of a sixpence. Dr. Farquhar has counted as many as five-and-twenty on an adult's leg in the middle of October, all more or less in an active state, and he has also known a Scinde boil kill a strong man through continuous sloughing of the core and edges; erysipelatous attacks supervening and exhausting the patient. Poultices favour the reproduction of these boils tenfold at times.

It is important to gain the views of others on the question of the nature of Scinde boil, and as to whether Delhi sores occur as a distinct disease in Scinde.]

Cause of Delhi Sore and allied Diseases.—The disease "Delhi Sore" would seem to be widely existent, not only in India, but in Eastern cities generally, so that we must look for a common cause in operation over a wide area, not in anything specially peculiar to Delhi.* It is clearly not connected with poverty—Dr. Murray's report† seems to show this conclusively; nor does it appear to depend on malaria directly, since it is found to be absent from some of the most malarial districts. Then it has been ascribed to the bite of an insect, but of this there is no positive evidence. Delhi, it is true, is remarkable for its flies, but then Delhi sore is rare, whilst flies abound, amongst the suburban population. Then the water has been blamed for the occurrence of the disease, and in two chief ways; firstly, in regard to its impurities, which it is said, taken internally, induce the disease, and secondly, in that the disease is averred to be caused by ova of insects, introduced beneath the skin from the water used for washing. The Biskra bouton and Aleppo evil are said to be caused by bad water. If the cause be in the water, some condition common to all cases of the three diseases, and the districts wherein they occur, should be found. In Dr.

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* See Report on Delhi Sores by Staff-Surgeon-Major A. Smith, forwarded to Government of India, July, 1869, in which he bears testimony to the fact that boils having all the characters of Delhi Sores are met with in a number of different places in India.

† Report of Special Medical Committee Convened by Order of Government of India, to Inquire into Cause of Delhi boil. Dr. Murray, President.

Murray's official report, reference is made to the remarkable immunity of a detachment of native cavalry drinking excellent water which they obtained outside the Lahore gate of Delhi. Can similar facts be observed elsewhere—viz., immunity of certain sections of the community who are using a special water supply? Dr. Fleming's observations on the microscopic appearances of Delhi boil before ulceration, in which nothing like ova were observed, would seem to set aside as untenable the doctrine that the disease is due to any parasite, and, as before observed, the fact of parasites being found in ulcers is no evidence that they are the cause of them, and it would be surprising if they were not so found in India. Surgeon-Major Smith most strongly inclines to the opinion that the disease is caused by some parasite, and argues that these come from the water used for washing; but Mr. Alcock (*Med. Times and Gazette*, Nov. 22, 1870), meets this by saying that the disease does not prevail amongst the water-carriers, as in the case of the guinea-worm disease, which it would do if it were an animal parasitic disease occasioned by the contact with the skin of certain waters containing the parasites.

But it is important to notice some other facts. Many observers (Dr. Smith amongst them) agree in stating that Delhi sores are very liable to be immediately developed in the seats of abrasions, and that small sores take on in India an ulcerative character like Delhi boils. Dr. Smith speaks of this as occurring in the chafed surfaces which occur in winter, in connexion with the wound of a dog's leg, &c. Mr. Cleghorn notices the same thing ("Sketch of Medical History of the Native Bengal Army," 1868), and so does Mr. Alcock (*Med. Times and Gazette*, loc. cit.), who has seen "an accidental abrasion become a specific sore within a fortnight." Whether similar occurrences are observed generally in connexion with the development of Delhi boils is a point to notice in future. There can be little question that disorder of the general nutrition induced by climate is one element in the production of Delhi boil and its allies. The parts attacked are those most exposed to injuries, and after all it may turn out that simple boils, wounds caused by mosquitoes, local abrasions and injuries, &c., because of the disordered state of health, take on the morbid action observed in Delhi boils. We are not without analogical evidence of similar disease being induced in like manner in this and other countries. In the West Indies simple sores take on not a suppurative or ulcerative action, though they do this sometimes, but frequently are succeeded by an hypertrophous growth of the fibrous tissue as the result of climatic influences or racial peculiarities.

Again, French medical officers* state that the French in China suffered from a species of severe ulceration (to which the term Cochin China ulcer was applied), which was ascribed to climatic causes. It attacked at all ages, both sexes, and men of all kinds of constitution. It consisted in "ulceration following some lesion of the skin, often the most trivial," the legs being most affected, the ulceration not deep as a rule, but occasionally severe and rapid. These and similar facts suggest the question whether after all Delhi sore is not a species of furunculus modified by climatic influences. But there are two other considerations that militate against the doctrine of its local, and in favour of its essentially constitutional nature; the one is the immunity which is the lot of old residents in districts where the disease is endemic—an undoubted fact; and the development of the disease a long time after removal from those places in which it occurs. It may be said, if the disease were of parasitic origin, one might expect a certain period of incubation, but certainly not so long as is recorded of Delhi boil and Aleppo evil—viz., a year or more. We can explain the attack specially of new-comers to a district upon the supposition of its being a constitutional disease, as well as upon the ground of its being a local affair, and it by no means follows that because the disease can be cured by the destruction of the new growth described by Dr. Fleming, that therefore the disease is local, since the same happens with scrofulous and syphilitic sores, &c.

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* Dublin Medical Press, May 28, 1862, from Surg. des Hôpitaux.

Treatment of Delhi Boil.—Dr. Fleming, who has seen much of the disease, states* as the result of his observations, that we should "as soon as the disease is recognised in the form of a small flat reddish-brown growth in the skin, apply strong nitric acid or potassa fusa over the surface. One application may be sufficient if the growth be of short duration and does not affect the whole depth of the skin; otherwise two or more applications may be necessary to destroy it. Strong nitric acid is recommended for this stage of the disease. If a Delhi ulcer shows no tendency to heal from the edges, and to produce healthy granulations from the bottom by the simplest treatment, it is then certain that the whole of the morbid cellular structure has not been destroyed, either by the natural process of ulceration or the application of local remedies. In this state of the disease potassa fusa should be applied freely (more than once, if necessary), and the ulcer treated on ordinary principles, as it will soon assume a healthy appearance and rapidly heal. Various other local remedies can be applied successfully as long as the principle of destruction of the morbid cellular growth is carried out." He then deals with the question of *Prevention* as follows:—"Last year a partial microscopical examination of the ulcers which affect the nose of many dogs in Delhi, was made in connexion with a few experiments to ascertain their nature. The result of this investigation showed that they were similar to those which occur on the human subject, and also proved that dogs, as well as men, can easily be inoculated by the cellular substance from an undoubted Delhi sore. Delhi ulcers have been proved to be contagious, and the evidence of their contagion in numerous well-known instances giving rise to others in different persons, independent of those produced by inoculation, is quite conclusive. Delhi ulcers, therefore, as far as our present knowledge goes, propagate themselves in various ways amongst individuals or bodies of men, principally, if not entirely, by their discharge, which is most contagious when a thick gummy-like exudation appears at the upper part of a sore or from under a scab, just previous to the commencement of ulceration." And he continues—

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* Short Practical Remarks on the Nature, Diagnosis, Treatment, and Prevention of Delhi Ulcers, by J. Fleming, M.D., F.R.C.S., Staff-Assist. Surgeon. Delhi, Jan. 1872.

"The methods of prevention are as follows:—

"I. If domestic dogs are found affected with these ulcers let them be cured as soon as possible.

"II. All private native servants and those employed about the barracks, as well as the soldiers, should be periodically examined, and if the disease be detected in any stage the cases should be isolated and treated according to the plans recommended.

"III. Persons exposed to the contagion would do well to wash their bodies and extremities thoroughly with soap and water. Ulcers of a similar nature to those of Delhi are common at Mooltan, Lahore, and other overcrowded cities in India, as well as in Sind, Arabia, and Persia; and of course the same plans of treatment and prevention which have been so successful here will be equally applicable to other places. The foregoing remarks are based on the result of a long experience and observation in the treatment of this peculiar disease, as well as on many carefully-conducted experiments, and altogether lead us to believe that, if the preventive treatment be faithfully carried out, the 'Delhi ulcers,' after having existed many hundred years, may ultimately become a disease of the past."

I have no experience in the matter to offer, but I confess that I think it of no little importance to attend to the state of the general health, to give if necessary such remedies as quinine or iron in full doses, and to advise, under certain circumstances, change of air from malarious or otherwise unhealthy localities where Delhi boils prevail.

CHAPTER XIII.

SQUAMOUS INFLAMMATION.

GENERAL REMARKS.

There are two important diseases of the skin with which I shall deal in this chapter—viz., pityriasis rubra and psoriasis. In the former malady, in its typical form, the surface of the body is deeply reddened (hyperæmic), and covered by large and freely imbricated scales or flakes; hence the term—*pityriasis rubra*—applied to it. Now it has been thought that the shedding of the scales was the most important feature, but I am by no means certain that the hyperæmia of the skin is not the primary phenomenon and the hypertrophic growth of cuticle secondary; at any rate the two are equally important: and I have noticed the hyperæmia as the first stage. In the disease there is no real inflammation in the form of new products. Hebra allies it to eczema, and upon the ground that "we occasionally find moist excoriated patches on other portions of the skin, especially in the flexures of the joints" (see Neumann, *loc. cit.*). But this is infinitely rare; from beginning to end, there need be nothing but hyperæmia and scaliness present in the disease.

There is not necessarily any change in the corium tissue or the connective tissue, though the hyperæmia, if persistent, may be followed by hyperplasia and thickening of these parts, but only as accidental epiphenomena. On taking up Neumann's work I was surprised to find the following in reference to acute eczema:—"The eczematous places become swollen, reddened, and covered with vesicles, which subsequently burst and pour out a gummy viscid fluid. This dries to crusts, after whose removal the subjacent skin appears moist, and then becomes dry and red, with white scales (pityriasis rubra)." Here the term P. rubra is loosely applied to the healing stage of an eczema, when in fact all its typical characters have vanished: whereas it really signifies a primary condition of things that entirely lack the phenomena in the deeper parts of the skin peculiar and essential to eczema. The pityriasis rubra I shall describe is a primary form of disease.

In psoriasis a somewhat different state of things obtains: there is hyperæmia of the papillary layer of the skin, with hyperplasia of the epithelial elements, but I believe the latter to be the more important of the two: and in this respect psoriasis contrasts with pityriasis rubra—the former being essentially a disease of cell tissue, the latter rather an hyperæmia, primarily.

I might have classed the two diseases under hyperæmia or hypertrophies, but in the present state of cutaneous pathology, have preferred to place them under "Squamous inflammations," to avoid coining a new term or class.

PITYRIASIS RUBRA.

This is a primary form of disease characterized essentially by general hyperæmia of the superficial parts of the skin, and hyperplasic growth of the cuticular layer. I may as well add that—I use the term desquamation for all forms of shedding of the cuticle secondary to other disease (see Desquamation under Diseases of the Epithelium).

Clinical Features.—The disease commences oftentimes in those who have had a good deal of mental anxiety or who have been working laboriously, and the first signs are redness and scaliness in some part of the body—I have many times noticed this to be the chest—with a feeling of debility. Presently the patch begins to extend, and then the surface of the whole body speedily becomes *within a fortnight or so* hyperæmic—of a deep red colour, which is lessened by pressure, and is accompanied by constant exfoliation of branny lamellar scales, but without any exudation or infiltration of the skin, or any discharge at all from it. The face is red and "scurfy," the head also particularly "scurfy;" or in other words the scaliness in these parts is not quite so intense. The sudden development of the disease, and the way that it spreads so as to implicate the entire body are very characteristic. The developed disease varies but little in aspect during its whole course. Devergie remarked that P. rubra is the only disease of its kind which attacks the whole body from head to foot without leaving a sound spot. The patient sometimes does not complain of much inconvenience in the way of itching, but I have generally found that patients are tormented by "burning heats."

The desquamation, when the disease has fully developed, may be very free and extensive, the whole cuticle of the hand may peel off *en masse*, as it were, and the amount of scales shed day by day may be prodigious. About the arms especially, the scaliness may be markedly imbricated in regular order, like the tiles of a house, the white fringing presented by the free edges of the flakes contrasting with the red hyperæmic surface exposed beneath the white flaky masses. This appearance has given rise to the term applied to the disease of *dermatitis exfoliativa*, whilst the hyperæmia has suggested that of general dermatitis; but as I have stated, there is no true inflammation present in the disease. The nails, one or even all, may be shed.

Now if the patient dies no trace of the existence of the disease is left behind save the scaliness, which corroborates the view that I take of the disease, that it consists essentially of active and intense congestion with related hyper-production of epithelial tissue. The disease may subside gradually by a diminution of the redness and scaliness, or it may become very chronic, and then, as a consequence of the long-continued hyperæmia, the integuments thicken, so that the disease comes to resemble a chronic eczema or psoriasis, only that its history and distribution are so different. But as a rule the integuments, including the papillary layer, are not thickened: they are only reddened and scaly.

Patients affected with the disease are generally much debilitated, and after a while lose flesh, become pallid and emaciated, and are a very long time recovering strength again, if they ever do so. I have not observed the extreme marasmus and death, described by Hebra, result in English people.

But there are other phenomena. The disease is occasionally, but very rarely, patchy, and this is due to abortive development or to the fact that the disease is progressing towards recovery.

The mucous membranes in some of my cases have been usually greatly congested, including those of the conjunctiva, pharynx, and throat, and I have reason to think that pyrosis and menorrhagia present in certain other cases have been dependent upon a hyperæmic condition of the mucous surfaces of the stomach and uterus.

Pityriasis Pilaris.—Devergie gave this name to a condition of the hair follicles found in connexion with *pityriasis rubra,* and a most perfect and well marked example of this rare sequence of pityriasis rubra came under my notice in 1871. As the condition is a very rare one, I may be pardoned for quoting the notes of my case.

> "On stripping the man and looking at him from behind, the whole of his back from poll to level of sacrum and the upper half of each arm were seen to be studded all over with minute very pale red elevated points or knots, the size of pin's heads, giving the appearance of a much exaggerated goose-skin or a nutmeg-grater. Each point or knot was seated at a hair follicle, and produced by the plugging of the follicle by a collection of epithelial matter, so as to give the feel of a rasp to the hand on passing it over the skin. In the front these appearances were less marked, the papular giving the aspect of flattened acne punctata spots. Laterally the papules were very distinct; over the front of the arm, from the point of the shoulder to the junction of the upper and middle third of the arm, the nutmeg-grater appearance and raspy feel of the skin were well marked, but below the arm had all the aspect of pityriasis rubra. From the lower part of the spine behind, to the very toes the limbs presented the aspect of pityriasis rubra. In tracing up the disease from limbs to trunk, the aspect and condition of the pityriasis rubra gradually passed by transitional stages into that of a nutmeg-grater: and there was no difficulty in seeing how the one sprang out of the other. The uniform scaly red surface was noticed breaking up into distinct patches by the appearance of healthy islets of skin, and the isolated patches came to present the aspect of red distinct papules crowded together. In fact, higher up it was more clearly seen that the parts of the skin between the follicles became less and less, and at length ceased to be, hyperæmic and scaly, whilst the follicles remained plugged by the epithelium which had been shed into the follicle from the lining membrane."

In fact, pityriasis pilaris is nothing more or less than plugging of the follicles by epithelial cells shed from the lining membrane. Devergie said that this condition followed psoriasis palmaris, pityriasis capitis, or P. rubra; others say general psoriasis also. I suspect that in such cases the so-called psoriasis palmaris and pityriasis capitis are themselves the remnants of an antecedent attack of general pityriasis rubra. In psoriasis, the follicles will occasionally be observed to be plugged by epithelial matter, but I have never seen anything like true pityriasis pilaris follow psoriasis. In some cases where the circulation is torpid, no doubt the follicles may become plugged by collected epithelial matter, and this condition would be a localized pityriasis pilaris. (See Lichen pilaris.)

Nature of the Disease.—As I have said before, in those cases in which a post mortem has been made, no change has been found in the skin. The latter has been noted to be very pale and covered by fine scales. I do not therefore understand that the disease is more than an hyperæmia of the upper layer of the cutis involving its longitudinal plexus of vessels, with hypertrophy of the cuticle. Secondary hypertrophy of the fibro-cellular textures may follow in the wake of the chronic stages of the disease, but I cannot regard this as a necessary part of the disease, and I therefore emphatically deny the connexion between this disease and eczema, which is essentially characterized by inflammatory changes in the corium. But what, it may be asked, gives rise to the hyperæmia and the hyper-production of cuticle? I hold that it is the result of disturbance not merely of the sympathetic nervous system, but the trophic nerves, which is followed by dilatation of the arterioles of the skin generally, and not only of the skin, but the mucous membranes also, and by hyperplasia of the tissues (epithelial).

Diagnosis.—Pityriasis rubra may be confounded with three diseases—general *eczema,* general *psoriasis,* and *pemphigus foliaceus:* and pityriasis pilaris, with *lichen ruber.* The differences are clear. Eczema is essentially a catarrhal inflammation of the skin, having as its distinctive features special changes in the fibro-cellular tissue and the rete, with accompanying of sero-purulent discharge drying into crusts composed of inflammatory products. It is never general, and never has the history of pityriasis rubra. In psoriasis the disorder is essentially a change in the cell life of the rete, with attendant stasis in the capillaries of the papillary layer, which is thickened primarily. Psoriasis is also not so general, whilst pityriasis rubra is universal, psoriasis much more gradually travels over the body, and does not entirely cover it. The scales are finer in psoriasis, not yellow and flaky; and if removed, small bleeding points become visible, from the fact that the capillary vessels in the papillary layer are torn across. In pityriasis rubra the hyperæmia explains all the changes; not so in psoriasis, in which disease the amount of cell growth is by no means in direct ratio to the degree of hyperæmia, or *vice versâ*. It is perfectly true that in old standing cases of pityriasis rubra a certain amount of thickening from hypertrophous growth ensues, and then the aspect presented by the disease is that of general psoriasis; but the history of the disease proves that in pityriasis rubra the chief features of psoriasis are wanting, and in no case do we meet with primary hypertrophy of the papillary layer, whilst the scales on being removed do not exhibit the red bleeding points spoken of a moment ago. Moreover, if some parts of the skin in chronic pityriasis rubra be thickened, those which are not so plainly portray the true features of the disease. Pemphigus foliaceus might be mistaken for pityriasis rubra, on account of the large flakes that are sometimes thrown off in the site of the bullæ, the disease consisting of bullæ rapidly developed and drying up into lamellæ. But bullæ are always to be detected, whilst there is necessarily much moisture and a certain amount of crusting, or in other words inflammatory products are present.

The lichen ruber of Hebra, or lichen planus of Wilson, ought by no means to be confounded with pityriasis pilaris, since in the former the papules are formed by inflammatory products formed in and outside the wall of the follicle—*i.e.*, new tissue originating in the root sheath of the hair; whereas in the latter (P. pilaris) the papules are simply produced by little masses of epithelium which are contained in or dilate or plug the follicles. In the lichen planus the disease is dermic; in pityriasis pilaris it is cuticular. The papules of lichen ruber too are flat, red, fleshy, of shiny aspect, and exhibit a central puncture, which is the opening of the follicle, and are primary. Those of pityriasis pilaris are developed secondarily out of pityriasis rubra, and are more pale, raised, and the elevations they form can be picked out of the dilated follicle.

Treatment.—Hitherto writers on skin diseases have shirked dealing with the treatment of pityriasis rubra. It was with me until lately a most unsatisfactory thing to have to treat the disease, for following the traditions of the past, I worked away with soaps, tar, and other stimulants, only, I feel sure, to prevent patients from getting well. But taking the view that the disease was essentially an hyperæmia dependent upon disturbance of the sympathetic nervous system, and feeling that I had to do with a sensitive surface deprived of its natural protecting layer of cuticle, I adopted a plan of soothing and protecting the hyperæmic skin, whilst I gave general tonics, and to my astonishment I obtained really remarkable good results. In fact I have come to regard the disease not as incurable, but as curable.

First—as regards general remedies. Is arsenic of use? it may be asked. I have seen a few cases in which arsenic has been pushed to an extreme extent without in the least benefiting the disease; yes, and pushed so far as to induce muco-enteritis, followed by emaciation and serious symptoms. Further, I had a case recently under care which came on in a man who had been treated by arsenic for psoriasis, and in whom the disease appeared during the arsenical course. I do not give arsenic in the disease for its cure. But it is not merely medicine that is needed. Mental and bodily rest may be specially required in over-worked persons. Then the next point, I think, is to give diuretics largely, especially if the urine is deficient in quantity, as it sometimes is, or loaded with urates. The object of giving diuretics is to relieve the skin of work. Dyspepsia must also be properly treated if it be present. The next point when the kidneys act freely is to use tonics with a liberal hand, for the thermometer never, as far as I know, shows an elevation beyond the normal standard; it does not indicate any inflammatory condition. I prefer quinine and steel, with cod-liver oil, to any other remedy, together with good plain food. After a while the tincture of the perchloride of iron in ♏xv or ♏xx doses is useful, and I believe helps to constringe the dilated vessels.

Locally, the surface must be protected. My plan in the early stage of the disease is to keep the patient wrapped up in olive oil, so as to prevent the access to it of heat, cold, and other agencies, which would only unnaturally stimulate the hyperæmic skin. In my experience this plan is followed by good effect: the hyperæmia lessens sometimes very rapidly, whilst the scaliness becomes less and less marked, and presently patches of healthy skin make their appearance; the hands and feet may remain affected for some time, throwing off scales and flakes in abundance, and these must be kept covered up in oil. When the disease becomes chronic, or if the case is a chronic one when it first comes under treatment, the skin should still be soothed by being anointed with oil, but alkaline and bran baths are then advisable; and finally recourse may be had to tarry applications, but these should be very cautiously used. I prefer to trust to the improvement of the general health to effect a cure, rather than to local astringents and stimulants. My last four cases of well-marked universal pityriasis rubra have done excellently well under the system.

Pityriasis pilaris is to be treated by soaking the patient in alkaline baths to soften up the epithelial masses in the follicles, and by the use of a very weak ointment of unguentum hydrargyri nitratis (ʒj to ℥j).

Of course there may be special symptoms demanding attention, such as pyrosis or menorrhagia, which should be met with appropriate remedies. Some have recommended mercurials in the disease. I should be sorry to give them, except in alterative doses in very chronic cases where there is much thickening: and then I should conjoin their use with quinine and iron or bark.

ANOMALOUS FORM OF PITYRIASIS RUBRA.

I have observed a very curious form of disease in one case, which will be properly noticed here. It had all the features of pityriasis rubra without the hyperæmia; that is to say, there was the shedding of cuticle in flakes, but very little perceptible hyperæmia except over the exposed derma. The patient was a man, aged sixty, who came under my care with purpura of the legs. When this got well he reappeared with the cuticle flaking off the hands and various parts of the body after a fashion that led me to get out the following history. The man stated that he had suffered from many attacks, "nearly a hundred times during his life." Some doctors have styled the disease eczema, and some psoriasis. The attacks last four or five days. They consisted in the development of a scarlet eruption all over the body, preceded by "cold shivers," and followed by "burning heats" and pains about the knees, the back, and the thighs. The redness and burning continue till, as the man put it, the "heat burns out." Then the skin begins to flake off. As far as I could make out the first attack the man had, when he was young, lasted about three weeks, and had all the characters of pityriasis rubra. When the attacks come out the water is scanty and high-coloured. The patient is temperate. He suffers from debility, dyspepsia, irritable bowels, and water-brash at times. The hands have always suffered the most. At present the man is suffering from an attack, but the disease has been unaccompanied by actual hyperæmia of late years. The man complains of "chills" and weakness. There is no redness of the skin at all, but the cuticle is flaking off the body in large tracts (ex., the whole forearm) in different parts. The surface beneath is thin and pale, and made up of newly-formed epidermis. The flakes of cuticle are, like pieces of thin opaque tissue paper, over the body. The fingers are very painful, and look and feel tense. The cuticle is much thickened over the hands and fingers (the man is a carpenter), and it looks white, opaque, and dry, as though it had been uplifted by fluid that had disappeared. The cuticle over the palm of the hand can be uplifted *en masse* by taking hold of the centre, from the parts beneath, from which it is loosened, except at the borders of the palm of the hand. The man says the whole cuticle has oftentimes come off like a glove if he has slit it up over the back of the hand. It takes a fortnight for this "glove" to come away. In places where the fingers are denuded of cuticle the part is somewhat reddened. I noticed one curious fact, viz., on the leg and forearm the part, from whence the cuticle is shed when watched, became alternately reddened and pallid, and rapidly so. This was seen and noticed by others beside myself.

I have not the least doubt that this man had originally acute pityriasis rubra, and that he has had recurrent attacks, in which the hyperæmic feature has become less and less marked, but in which the cuticle has still been shed. The case points clearly to the influence of trophic nerves in the genesis of pityriasis rubra. I am by no means sure that pityriasis rubra may not recur in subjects in a more or less localized and modified form, not unlike psoriasis.

Whether there be any relation between pityriasis rubra and psoriasis I think is fairly open to discussion. I have seen pityriasis rubra supervene in a patient suffering from psoriasis, and I have seen psoriasis apparently arise out of a pityriasis rubra; but these may be only coincidences. The question is not one ripe for discussion yet.

PSORIASIS.

General Features.—This disease—psoriasis—is characterized by the presence of closely-packed, heaped-up scales, of a shining "mother-of-pearl like" aspect, seated upon an hyperæmic cutis, the papillæ of which are somewhat hypertrophied. The cutis, when the scales are removed, appearing red, and exhibiting minute red bleeding points that start into view when the white scales are removed. The white scales are composed entirely of epithelial cells.

The features of the disease are the more characteristic if account be taken of its negative signs; for in it there is an entire absence of any discharge, vesiculation, or pustulation, throughout the whole course of the disease. The characteristics above described constitute a primary condition.

The eruption affects (by preference) certain parts of the skin whose epithelium is thick, especially the elbows and knees. It may be partial or general. At the outset the disease may be attended by more or less pruritus. The increase of the patches is by centrifugal growth, and there is oftentimes a slightly red margin: the scales are shed, to be again replaced by others; in chronic cases the derma itself becomes very distinctly infiltrated and thickened. The general health is often apparently good. The disease is non-contagious, runs a chronic course, and is very prone to recurrence.

The structure of the large scales or squamæ of lepra is peculiar; if the under-surface be carefully examined it will be seen to be pitted or marked by little hollows, and these correspond to the enlarged papillæ of the skin; the adhesion of scales to the surface beneath is decided. The scales, placed under the microscope, are seen to be composed of epithelial cells only, matted together, well formed, sometimes even enlarged; many of the cells are flattened together so as to be almost fusiform, and the pressure which effects this results from their rapid growth and close package together.

Psoriasis is the same disease as lepra vulgaris. It was at one time the custom to apply the term psoriasis to the ordinary patches of the disease, and lepra to that variety in which the centre of the patch clears, and the disease assumes the *ring* form. This distinction is not now kept up.

Varieties.—Lepra begins by little minute spots of a reddish hue, made up of epidermic scales heaped together, over a hyperæmic papilla or two; this is called *psoriasis punctata.* This variety usually affects the body and limbs. When the spots are larger they look like drops of mortar, and the disease is then called *psoriasis guttata ;* this variety is observed about the arms, breast, back, legs, and thighs. When the eruption occurs in patches about the size of a shilling, it is termed *psoriasis nummularis,* the coin-like variety; it is produced sometimes by the enlargement of smaller spots. When the disease is in a still more developed condition, and consists of large patches, it is termed *psoriasis diffusa :* this often covers a large extent of surface, is always seen on the elbows and knees, the scales being well formed and the patches generally thickened, and often cracked. When the eruption takes the form of bands, it is styled *psoriasis gyrata.* This variety is always due to the running together of circles; the scales are mostly thin and speedily reproduced. This variety is generally observed about the back. Now psoriasis may pass through all these phases in one and the same subject, or the features of one phase may be preserved in individual cases. Then there is *general* psoriasis, which may present the features of any one of the varieties described: also chronic, or *psoriasis inveterata,* in which the patches are much thickened and cracked, the scales large, dry, and adherent. The patches may be hot and tender, and slight discharge may occur as a secondary accident. This is what Devergie called "psoriasis eczemateux." It presents the characters of psoriasis, and, in addition, the tendency to pour out a fluid secretion, which dries into scales of rather larger size than those of psoriasis, the surface beneath being red and slightly moist. This variety is seen about the forearms and legs. The itching and pain are more marked than in psoriasis, and, in fact, the disease is a mixture of psoriasis and eczema. When the scales are very white, the term *psoriasis alphoides* is sometimes used. Occasionally the accumulation of scales takes place to an unusual extent: the scales are heaped up so as to form crusts, something like those of rupia. Dr. McCall Anderson has given this the name of psoriasis rupioides. On removing the crust, a circular red surface is exposed, but it does not "discharge." There is a tendency in this form of psoriasis apparently to the production of pus. I have seen ordinary psoriasis assume the characters described as *rupioid* during convalescence from intercurrent measles, the debility consequent upon the latter favouring cell proliferation. I regard psoriasis rupioides as psoriasis modified by cachexia, in which there is a tendency to pus formation. There is no ulcerative stage, and therefore the word rupioides is apt to mislead; and my friend Dr. W. R. Taylor, of New York, has stated his agreement with me on this point, after having himself made careful microscopic observation. Itching is occasionally troublesome in the chronic stages of psoriasis. The elevation of the patches varies, generally it is about a line.

It is customary to make certain local varieties: they are:—

Psoriasis capitis.—The head is one of the commonest seats of the disease, next to the elbows and the knees: the whole scalp may be affected, or there may be only one or two small points of eruption; when extensive, the disease travels on to the forehead, forming a kind of fringe along it at the upper part. There is coexistent disease elsewhere. The hair on the scalp thins out frequently when psoriasis attacks it.

Psoriasis faciei.—In this local variety of psoriasis, the patches are often circular, they are less hyperæmic, less thick, and less scaly than when the disease attacks other parts of the body, and they present consequently much similarity to tinea circinata, except that typical patches of the disease are seen in other parts of the body.

Psoriasis palmaris and *psoriasis plantaris* are important local varieties. These local varieties are *infinitely rare.* Of course, instances of so-called psoriasis palmaris and plantaris are common enough, but they are practically always syphilitic. I perfectly agree with Neumann as regards the rarity of genuine non-syphilitic psoriasis of the palm of the hand. Non-syphilitic psoriasis, however, may occur though rarely, in connexion with general psoriasis. But when such a condition exists as the sole disease, it is syphilitic and nothing else, and the concomitance of sore tongue and other evidences of constitutional syphilis at once make the diagnosis certain. The skin in the affected parts is generally thick, and dry, harsh, discoloured; the scaliness is not very marked, but the superficial layers peel off from time to time. Presently the surface cracks and fissures, and healing is very tardy; occasionally the surface bleeds. The muscular movements of the hand may be painful.

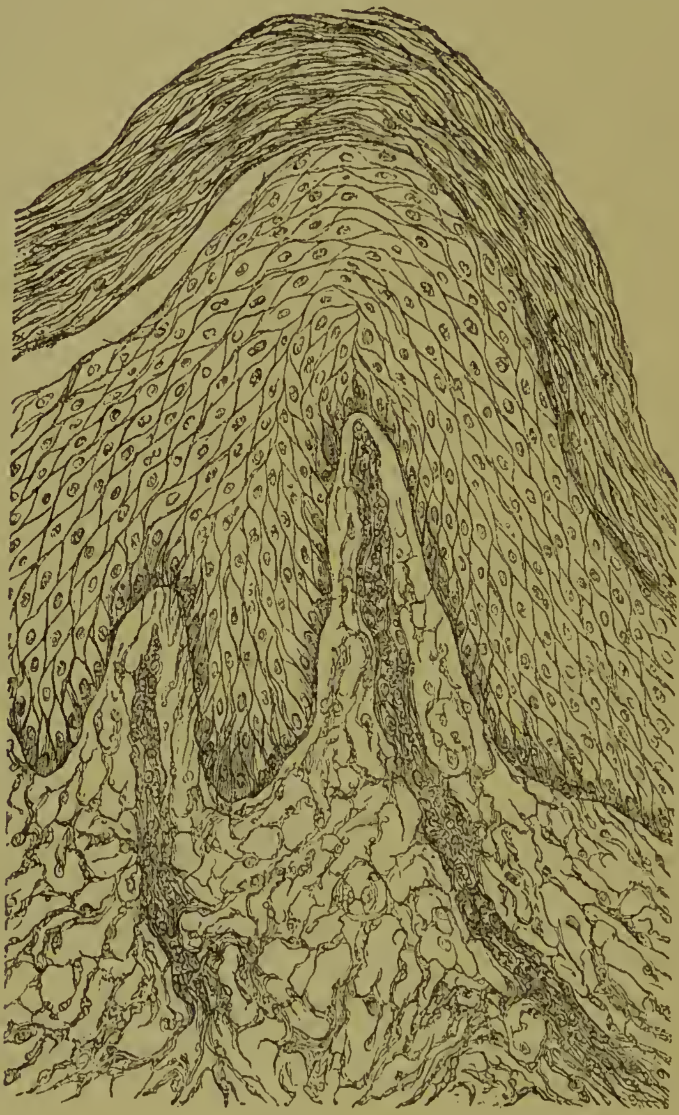
Psoriasis unguium is mostly a complication of the inveterate form of psoriasis, but it may exist alone. The nails (and several are usually affected) lose their polish, and soon become opaque, thickened, irregular, and brittle; they are then fissured and discoloured in lines (from dirt), their matrix becoming scaly.

Psoriasis also affects the scrotum and prepuce occasionally: the parts are swollen, red, hard, tender, scaly, fissured more or less, and give exit to a thin secretion, which adds to the scaliness; there are pain and pruritus: and the local mischief may be the sole, or part only, of general disease.

When psoriasis is in progress of cure, the scales lessen and the reddened elevated surface beneath comes more prominently into view, but this diminishes gradually till the eruption disappears, leaving oftentimes no trace of its former presence behind. It may leave, however, pigmentary stains, the result of the congestion. It is in the disappearance of patches of psoriasis that the centre rapidly clears, and the ringed form or *psoriasis circinata,* or the lepra of old authors, is produced.

Pathology and Cause.—Hebra and some of the French writers have sought to ally psoriasis to eczema and lichen, but this juxtaposition is at variance with the pathology of the disease. If a portion of skin affected by psoriasis be examined microscopically it will be seen that the papillæ of the skin are enlarged, the epidermic cells of the Malpighian layer being specially well de-

Fig. 26.



(After Neumann.)

Epidermis and rete Malpighii largely developed; papillæ enlarged. Cell-growth along vessels and in meshes of corium.

veloped, especially in old-standing cases. In addition, cell-growths, resembling cuticular cells, are observed along the course of the vessels running near to and into the papillæ, and these vessels are, like the other structures, of larger size than natural—they are, in fact, hypertrophied. This new cell-growth is most abundant in the upper layers of the corium, and about the apices of the papillæ, where cells are piled together into little heaps, and no doubt are pushed forward to form the ordinary scales. Neumann, who has lately investigated this subject, finds that the vascular twigs sent by the vessels of the corium to the papillæ are peculiarly well-developed, spread over the entire area of the papillæ, and even disposed in circles, or twisted at the summit of the papillæ, so that the "cells" which are outside the vascular walls are arranged in the long axis of the papillæ at first, and then have a more or less horizontal direction at the apices of the papillæ. As the vessels are so abundant, the whole stroma of the papillæ is filled with the cells which lie outside the vessels. Hence there is hyperæmia of the cutis, hypertrophy of the papillæ as a whole, and an excessive formation of the cells which ordinarily go to form the epidermis, this cell proliferation commencing in the upper layer of the corium, being chiefly marked in the parts around the vessels of the papillæ, and coming forward to the surface in the form of the white imbricated scales. Now these changes are primary in psoriasis; cell proliferation occurs to a varying extent, as the result of congestion in other diseases—but here it is essentially primary. The cell-growth may exhibit an amœbiform character.

The preceding figure (fig. 26) is Neumann's representation of a portion of skin taken from a psoriatic patient.

Nature of the Disease.—It was at one time the fashion—when humoral pathology was more in favour with physicians than it now is—to refer the occurrence of psoriasis to a special diathesis or blood state. But of the existence of such a thing as is implied in these two designations there is not a particle of proof in our possession. All we know is, that there is an overgrowth of more or less imperfectly formed epithelial cells in connexion with marked hyperæmia of the papillary layer of the skin and a certain amount of newly-formed tissue outside the vessel's walls; whence the latter come is uncertain! Rindfleisch expresses the views of German observers tolerably correctly, when he remarks that, "the squamous exanthem without doubt takes its origin in a chronic inflammation of circumscribed spots of skin. These are reddened, slightly swollen, and endowed with the other attributes of an inflammatory hyperæmia; as the consequence of this hyperæmia, however, there appears not an exudation in or under the epidermis, but only a more abundant formation of otherwise normal epidermal cells; . . . . . it is an inflammatory hyperplasia." For my part I fail to see in psoriasis more than an hypertrophy, and cannot accept the statement that it is a true inflammation. I am perfectly willing to allow that it may assume an inflammatory aspect if the blood of the psoriatic patient is charged with bile products, uric acid, or the like; but *per se* the psoriasis does not seem to me to be an inflammation—*i.e.*, characterized by the formation of new products that tend to the formation of pus.

But admitting that it is essentially an hyperæmia with hyperplasia of the epidermis, the reader will want to know what occasions these changes. Now I observe that there is no necessary relation, as for instance in pityriasis rubra, between the degree and extent of hyperæmia and the amount of cell change in psoriasis; nor do I find physiology teaching me that such cell proliferation as occurs in psoriasis would be likely to follow hyperæmia *pur et simple.* I am therefore constrained to believe that the disease consists primarily and essentially in a misbehaviour of the cell elements themselves—a perversion of the ordinary cell life of the epidermis—a true tissue disease in which the trophic nerves probably play the chief part. One consequence of this perversion would be hyperæmia, and anything that increased the hyperæmia would react upon and increase the cell proliferation.

Causes.—Psoriasis is often hereditary. It attacks males more than females, and is most common between the ages of fifteen and thirty. Persons of sanguineous temperament are most liable to the disease perhaps, and it is seen in persons of all classes of society, and mostly in summer and winter. The cause is unknown.

Prognosis.—The disease is mostly difficult of cure and has a tendency to recur. The most obstinate cases are those of psoriasis nummularis of the back and buttocks, as far as I have seen, in which there is much elevation and thickening and deep redness: and psoriasis about the hands and feet.

Diagnosis.—Red patches covered over with white more or less silvery-looking scales as a primary formation, without any history of discharge, are the main diagnostic points. Psoriasis may be confounded in its local varieties with pityriasis, eczema, tinea circinata, erythematous lupus; and, when general, with pemphigus foliaceus, pityriasis rubra, lichen planus, and the squamous syphiloderm. *Pityriasis* is known by its thin, branny scales, which freely exfoliate, and do not therefore form imbricated layers, and by the absence of all thickening or marked hyperæmia of the cutis. The diseased patch is not elevated, it does not feel thick and harsh, and the elbows and knees are not specially affected. *Eczema* always has a history of "discharge." Crusts, as distinguished from scales, are present in the early stage of eczema, and therefore it is only in chronic eczema, when the epithelial formation is recovering itself, that any error can arise. In this the scales are mixed with blastema, they are thin and loosely attached, not silvery white; there are burning and itching in eczema, and the disease is not seated at the elbows and knees. In *tinea circinata* there is a kind of scaliness, but it is rather a "fraying" of the epidermis; there are itching, and a circular form—the centre being pretty smooth whilst the outer edge is somewhat papular; tinea circinata is unsymmetrical, often vesiculating at the edge of the patch, and under the microscope the scales are seen to be composed of blastema and epithelial cells and fat, together with spores and often mycelium threads that lie among the mass; and lastly, the disease is contagious and may exist in several members of a family. *Erythematous lupus* ought not to be confounded with psoriasis; there *is no true scaliness* in it, but deposit in the skin, with a tendency to loss of substance and scarring, a gelatinous look about the tissue of which it consists, and a deep red colour. Lupus is mostly limited to the face. *Pemphigus foliaceus* is known from general psoriasis by the fact of its origin from bullæ, the presence here and there of bullæ, the absence of silvery imbricated scales, and the presence of large flakes or lamellæ, produced by the collapsed walls of the bullæ, together with more or less secretion. *Pityriasis rubra* has no thickening of the cutis, no papillary hypertrophy, but constant exfoliation of flakes, together with small scales: Pityriasis rubra is also absolutely general, attacking every part of the body; there is a peculiar yellow aspect about the disease which is well seen if the blood is pressed out of a portion of the affected skin, and the hyperæmia is more perfectly marked. *Lichen planus* is a papular disease. The papules are at first discrete, they are always dull red, flat at the tip, and of glazy aspect, and when patches form the surface may be covered with scales, but they are very fine and very thin, and characteristic papules may be seen about the edges of the patches. The confusion of *Squamous syphiloderm* is by no means unlikely. In the syphilitic disease, the scales are few, fine, and adherent, they cover over not a bleeding corium, but a faintly red infiltrated papillary layer, and there are usually plenty of concomitant evidences of syphilis present. Eczema may complicate psoriasis, then there are the characters of psoriasis in addition to those of eczema. This is the explanation of those cases of chronic disease which commence as psoriasis, and presently exhibit more or less "discharge" and crusting.

Treatment.—I now have to speak of the treatment of psoriasis in detail. It is only by combining in a happy manner the use of internal and external means, one can expect to obtain the best results.

My treatment of the disease is based not upon the assumption that the disease is caused by a special diathesis, for there is not a particle of evidence of its existence; nor by the presence of a special blood contamination, because this would surely, as blood diseases always do, give evidence, by signs, of disturbance of the general system; the fact being, that a patient may—if he or she be young—be, *quoad* the skin, absolutely and entirely psoriatic, and yet in fair health, at least as regards the composition of the blood, which could scarcely be the case if the blood was altered so far as to account for the changes in the nutrition of the whole skin. Further, my treatment of the disease is dictated not by the assumption that the disease is an hyperæmia, with consecutive hypertrophous growth of the epidermic cells, because the hyperæmia is not necessarily primary, as far as one can judge, since the amount of cell-changes bears no direct relation to the degree of hyperæmia, and the particular cell-change is often absent in hyperæmia; but by the belief that the essential change from first to last in psoriasis is a misbehaviour of the cells themselves—a perversion of the ordinary cell life of the epidermis, no doubt connected with some lowering of the vitality of the system, as all proliferations are; and upon the further assumption that anything that will increase the congestion will intensify the disease, as is the case when gouty products or retained excreta circulate through the skin; and anything that lowers the nutrition of the body will afford the disease more play. It is to the negation in the first place of the whole batch of these more or less accidental influencing or intensifying conditions, that the operation of an internal remedy is first to be directed.

General Considerations.—Bearing in mind the fact that there is no specific for the disease, I think the practitioner should be careful to note in cases of psoriasis, in reference to general treatment, the following points :—

Whether the Disease is or is not Typical?—typical that is as regards aspect on the one, and seat on the other hand. The scales in typical psoriasis are well formed, numerous, and white, the elbows and knees being markedly affected by the disease; whilst if the scales be few, fine, and adherent, and the disease, though extensive, does not attack the elbows and knees; if there be much more staining of the skin than usual, and the patches are small, circular, and generally distributed, the observer should be on the alert to discover a syphilitic taint in the system. Untypical psoriasis as regards naked-eye features may be accounted for by the occurrence of psoriasis in syphilized subjects. It is the discovery of concomitant evidences of taint in the system that affords the true guide to treatment. And there is another feature, which is still more suspicious—that is, a multiformity of aspect: if there be any tendency to ulceration here, to the formation of tubercles or knots there, especially about the palms of the hands or soles of the feet, or the formation of dark crusts, as one sees occasionally, about the legs, then the presumption af a syphilitic taint becomes strong. Donovan's solution is a good remedy for untypical cases of the kind referred to.

Whether the Disease is Acute and General, or Localized and Indolent?—In the former case, the skin is sensitive to external irritants, and liable to be easily congested from external irritants, and it is a very excellent plan to give diuretics freely for a while, so as to relieve the skin, as it were, when the disease shows a tendency to invade a large portion of the surface rapidly. This is a particularly satisfactory line of treatment when the disease assumes an inflammatory aspect, or is accompanied by pyrexial symptoms of any kind or in any degree. Where the disease is localized and indolent stimulating remedies may be used freely and at once.

The Age of the Patient.—Attention to this point is of very great moment. In the young, one has to deal with mal-nutrition and want of food, or a strong hereditary predisposition; in the middle-aged, with mal-assimilation, syphilitic taints, &c.; and in the old, with gouty and rheumatic habits of body, in association with the circulation of uric acid and other excreta in the blood, and with complicating organic disease of internal organs functionally related to the skin. If I may draw a practical conclusion from the results of practice, I should certainly say, that most frequently the young suffering from psoriasis will require to be fed up: and the old to be treated with a view to the remedying of deficient excretion. The young are free from syphilis, gout, dyspepsia, functional and organic diseases of internal organs, which impurify the blood and often aggravate psoriasis: in fact, I am in the habit of saying to students that cases of psoriasis may be divided into two classes—psoriasis in the young, to be cured by cod-liver oil and iron and quinine as regard general remedies: and psoriasis in the old, to be treated by tonics it is true, but also by anti-dyspeptical remedies, diuretics, alkalies, mercurials, as the case may be, since a variety of special concomitant conditions, not present in the child, influence the psoriasis greatly.

Station of Life.—There is a wide difference to be made between the hospital and the well-to-do private patient. In the former, man or woman or child, there is frequently exposure of the surface to alterations of temperature: there are often poor living, deficiency of fresh vegetables or meat in the diet of the child or adult, and milk in that of the young. There is in operation in women, again, the lowering effect of over-lactation, without proper means being available for the due sustentation of the mother, under ordinary conditions. The hospital patient, too, suffers under a lack of proper ablutionary arrangements, which gives the skin less chance of remaining in a healthy state. In the better class of society, high living and the free use of wines, stimulating dishes, and the like, without the taking of proper exercise, are at work to impurify the blood, and it may be give it an irritating quality, as regards a skin disposed to be psoriatic. Hence the value of aperient tonics in these instances.

Diathesis of Patient.—I invariably treat psoriasis in lymphatic and strumous people by the free exhibition of cod-liver oil in conjunction with other remedies: this is a course I never omit, and I think it serves me well. I have mentioned the syphilitic taint. If, as sometimes happens, the psoriasis takes on an eczematous appearance, I regard this as an indication that the nervous system is specially deficient in tone, and I have recourse to nervine tonics accordingly.

When should we give Arsenic?—I think in cases where the scaliness is well marked, and the disease in other respects typical, that is, attacking the elbows and knees as well as other parts; where there is nervous debility; after having counteracted gouty influence, and got the excreting organs into due working order, if necessary; and when the disease is chronic.

Dr. E. Lipp advises* the subcutaneous injection of arsenic for the cure of general psoriasis and extensive chronic eczema. He uses a watery solution, containing a tenth of a grain for a dose, which is injected at intervals of from one to two days. The dose may be gradually increased. The best seats for the injection, Dr. Lipp says, are the lower part of the back; slight irritation only follows, and disappears in a few days. This observer records some six instances in which good results occurred, but it seems that after 8·8 grains were used in one case in forty-eight days, and 4·5 grains in another in thirty-eight days, *new spots of eruption appeared*, though the old eruption went—a telling argument against the subcutaneous use of arsenic. The consequences of the injection were in some cases as follows:—

The pulse was rendered more frequent. The temperature was raised, in one case rising to 101·85 degrees Fahrenheit. The appetite was lessened, thirst increased, diuresis was excited, together with a feeling of constriction of the thorax, nervousness, headache, dizziness, nervous cough, tickling in the larynx, and injection of the conjunctivæ. But all these disturbances, except the increased frequency of the pulse, ceased upon lessening the quantity of the injection or suspending it altogether for from one to three days.

For my own part I prefer, in giving arsenic, to give it in the solid form as follows:—arsenious acid, 1 grain; quinine, 20 grains; extract of henbane, 20 grains; extract of gentian, 20 grains; to make twenty pills, one to be taken after breakfast and dinner. In some cases I combine reduced iron with the pills. Of course they must be made with care, and the ingredients thoroughly incorporated together.

As regards local measures I have already said that in acute and general psoriasis, the skin is very readily stimulated and congested, and, when this is done, the disease is likely to spread; so I have found over and over again. Hence I conclude—and the treatment adopted on this supposition shows how true the conclusion is—that in the early stages of every case of psoriasis, especially in the young, where congestion is marked, and especially where the disease shows a tendency to spread and to develop itself in new places, the skin should not be stimulated, but simply soothed—the object being to diminish, prevent, and dispel congestion, through the agency of which the disease is enabled to spread and develop—whilst exhibiting appropriate internal remedies. In the later stages, and in certain cases from the beginning, stimulating the skin is not followed by any but good results; but here congestion, if present, is not of the active, but rather the passive kind, but stimulating remedies should be employed where no new patches are developing, and where scaliness, rather than redness, predominates. These considerations constitute rules for the use of local applications in psoriasis: palliatives alone I hold should be used in the early and congestive stages; and stimulants, resolvents, revulsives in the indolent and chronic stages, where the cell changes are the most noticeable feature. From doing violence to these therapeutical dicta, an immense amount of mischief is inflicted. I am positive that I have—following the routine plan of treatment in years gone by—spread the disease (in the young especially) by the careless use of tar ointment; of this I have no doubt whatever. There is another point of great moment in the local treatment of psoriasis: to be sure that our remedies, applied for the cure of the disease, reach its real seat. It is by no means unnecessary to urge the importance of getting away the layers of scales in cases of psoriasis before applying our tarry preparations and the like. This is done by a judicious combination of alkaline baths and water-dressing, or, where the disease is extensive, wet packing. But there is this to be said in reference to all watery or liquid applications, whether it be for the softening up of patches or the removal of scales by maceration, that some oily or unctuous matter should *invariably* be applied after their use, so that evaporation may be hindered as much as possible, and so the patch or patches be prevented from becoming harsh, dry, and cracked. In fact, I think the maceration, or water-dressings, should never be resorted to, without the after application of unguents or oils of some kind or other.

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* Archiv für Derm. und Syph., 1869, iii. p. 362.

I will now proceed, *having indicated the general principles upon which treatment is to be conducted*, to sketch certain variations of treatment, both local and general, that seem adapted for particular classes of cases.

I will refer to the case of the child first. If the disease is pretty general over the body and the skin is irritable, the patient should be soaked in an alkaline bath, containing two ounces of bicarbonate of soda, with two or three pounds of clarified size, every night for a quarter of an hour or twenty minutes, and subsequently be freely anointed with oil. Not only does the bath and oil soften up the integuments, remove the scales, and soothe the skin, but I am by no means sure that the oil does not get in part absorbed, and nourish. This plan should be pursued for some time, so long in fact as there is any disposition exhibited to the development of fresh spots. Afterwards to the baths at night may be added some sulphuret of potassium, a quarter or half an ounce at first. The use of the alkaline baths may be, if preferred, followed up by the application of some mild mercurial ointment (see Formulæ, No. 138), or some tarry preparation (see Formulæ, No. 108). If this plan stimulates, it had better be given up. I have lately tried, at Dr. Auspitz's suggestion, mercurial inunction, in the case of a young girl, who had seemed to improve up to a certain limit, but had come to a standstill, even getting worse under various treatments—but with the effect of curing the patient completely. It is a plan I shall pursue with a view of testing its real merits. My general treatment for psoriasis in the young is now, in fact, the use of cod-liver oil and steel and quinine, alkaline and bran baths, with a free inunction of oil into the skin. I cannot say much in favour of arsenic.

As regards cases of ordinary psoriasis in the adult of an acute character, and in which the disease is characterized by a certain amount of congestion, I likewise have found alkaline and bran baths, with inunction of oil in the first instance, prepare the way for a more effective plan of remediation. But so long as fresh spots are appearing, as a rule I withhold tarry preparations; and if there be any pyrexia, or the skin be irritable and congested, I use the simple diuretics freely. In fact, when the disease is actively increasing, the emollient, diuretic, and aperient treatments should be first used.

If the disease is slight and localized to a few spots only, one may at once begin with tarry applications, for the scales are thereby removed sufficiently well. An ointment composed of olive oil ʒj, pyroligneous oil of juniper ʒij, and adeps ℥j, may be used night and morning. At the hospital I employ creasote, gtt. vj, nitric oxide of mercury gr. vj, adeps ℥j. A bismuth ointment is likewise efficacious. Of course attention is to be specially directed to the mode of life, mal-assimilation, nervous debility, &c. But supposing that the body is chronically affected, and that the scaliness is the most marked feature, and the patches of disease are not particularly thickened, the patient being in tolerable health, I then have recourse to water dressing and wet packing, which are of no little value at times. One thing must not be forgotten—viz., that it is simply out of the question to get an Englishman to waste very much time over medications. There is his disease, consisting of irregular patches of psoriasis, say all along the outside of his forearm or about his legs, his thigh, and his body, and covered thickly with scales. The doctor wants to soften up the patches, but the patient wont be packed, or stay in a water-bath for several hours. In these cases one or two places may be selected and wet rags applied, with oiled silk outside, in the evening before the patient goes to bed, as he sits and does his writing or his smoking. An arm and a leg, or two arms, may be taken one night, and a second leg and arm the next night. By the time the patient goes to bed, the patches have undergone sufficient maceration; the scales can be all removed, and some greasy application can be used. The following is a very good one to an ordinary case of psoriasis which is passing on to the chronic stage:—Nitrate of mercury ointment, ʒj to ʒij: powdered oxide of zinc, ʒij; solution of lead (liquor plumbi), ʒss; carbolic acid, fl. drops, ij; olive oil, ℥j; or ℥iss. The carbolic acid can be gradually increased, or the pyroligneous oil of juniper substituted for it. When the patches are not much thickened the maceration of the cuticle may not be required, and an ointment composed of a few grains of white precipitate and nitric oxide of mercury to the ounce of ~~lead~~ may be applied night and morning with excellent effect (see Formula, No. 97). Water-dressing or packing is sometimes too stimulating, in which case it must be used less frequently, whilst oil inunction should be more freely practised. As the disease is, or becomes, more chronic, strong tarry preparations may be used, the object of these being to check the cell proliferation without over-stimulating the skin. There are three kinds of tarry fluids in favour—the oleum fagi (fagus), the ol. cadini (juniper), and ol. Rusci (betula alba). These may be used in the proportion of one part to three or four of oil or lard, and are equally efficacious.

A favourite formula is that given in the Formulary at No. 83. It is applied with flannel or a coarse piece of cloth, and is firmly rubbed into the part night and morning according to the effect. It is good for psoriasis of the scalp, but I find it too irritating for general use.

When the disease becomes still more chronic and indolent, and where the patches are much thickened, or where certain old spots continue to exist in particular parts without change, it is then that the so-called soap treatment and the use of absorbents and revulsives are called for, and are found to be very efficacious. The soap treatment consists in rubbing soft soap, from two to six ounces, according to the extent of the disease and the sensitiveness of the patient, into the diseased patches very firmly with a piece of rag night and morning, until the epidermis is rubbed off, and the congested derma bleeds, when the part is dressed with litharge ointment; successive rubbings being adopted towards different regions day by day, the patient being kept in a blanket all the while. The soap inunction, in fact, is pursued until each patch of disease is softened up and the derma excoriated.

The orthodox Vienna mode is to place the patient between two blankets, or to make him wear a woollen shirt and drawers after the friction with soap, which is rubbed in twice a day for the first six days; once a day on the seventh, eighth, and ninth days, a bath being given on the thirteenth or fourteenth day, because if given earlier the skin is apt to become excessively tense and uncomfortable. To me this seems an odd way of treating an English private patient, and he would be a lucky man who should continue to keep up the confidence of the patient under it.

Now I believe that the plans of macerating in wet packing, and the soap treatment, do well in a certain number of inveterate and indolent cases, in Englishmen; but that they can be used with us so extensively, or to such an extent, as in Hebra's cases, I am prepared to deny, not only as regards psoriasis, but other diseases. I prefer in the very chronic psoriasis of the adult, water dressing, baths of sulphuret of potassium, and weak mercurial ointments, as far as local measures are concerned. But of course, in connexion with the use of these local measures, the practitioner will give such internal medicines as will fulfil the general indications before alluded to as desirable to secure in the treatment of psoriasis. The skin of an Englishman is more apt, it seems, to take on inflammatory action — that is my experience, judging of the results obtained from the adoption of foreign therapeutical recommendations; and it requires soothing remedies in much greater abundance. Indeed, whilst the same general principles of therapeutics of course hold good in regard to cutaneous troubles amongst English and the continental nations, I most emphatically say that there are important differences which must be observed as applicable to the two, and I enter my protest against the prevalent opinion and belief, that exactly what will suit a German or a Frenchman will suit an Englishman.

Differences in the pathological conditions of the same disease, as seen in Vienna and London, are observed, and such being the case, merely even *à priori*, one may expect that some differences of treatment may be required to suit the respective constitutional conditions which result from the operation upon individuals of different modes of life, climatic influences, particular diet, habits, and a dozen other like things.

It is too much the fashion to accept German statements and opinions—most encouraging as they are—as perfectly representing English cutaneous medicine. I repeat, then, that in Englishmen, psoriasis demands a much more soothing treatment, and a much more careful use of irritant and stimulant remedies, than is generally supposed.

In the very chronic cases of disease, where one finds the general health good, the persistent use of arsenic in the solid form is the best treatment, and phosphorus seems oftentimes to act effectively in connexion with tonics or arsenic in those whose nervous system gives evidence of too much wear and tear, from professional or other work, or mental care and anxiety. In other cases, when any evidence of a rheumatic tendency can be detected, as, for example, in the occurrence of sciatica, I at once proceed to the employment of alkalies in large and persistent doses.

Some of the most difficult cases the practitioner is called upon to treat, are those occurring in the aged, though, of course, they are not numerous. The disease often has a history of twenty or twenty-five years' duration, it assumes an inflammatory aspect, tends to become complicated with eczema, may be associated with various organic diseases; or it occurs perhaps in those who have lived freely—port-wine drinkers it may be—and who have a gouty tendency. It is often the case, that the disease is made worse by all the ordinary external applications. These are most difficult cases to cure, partly because of the obstinacy of the patients in declining to pursue any one plan of treatment, tired as they are of trying different doctors and remedies. I believe that packing in oil is best for these cases, with the free use of liquor potassæ and quinine internally, for these patients sometimes bear arsenic very ill. When the skin is freed from scales and becomes less irritable, I know nothing so good as a weak nitrate of mercury embrocation, used after wet packing to certain portions of the body about every other day; the embrocation being cautiously used. But I prefer the oil-packing to any other remedy, and it can be used each night, the patient being packed for the night. In cases in which a tendency to eczema shows itself, where the psoriatic patches are of circular form, thinnish, pale, scattered generally over the body, irritable, and accompanied by much discoloration of the skin, such waters as those of Harrogate are very good, in conjunction with sulphur baths. Now and then very special debilitating influences are at work to depress the patient, such as mental anxiety, hyperlactation, or intense anæmia. These necessarily require treatment by appropriate remedies; rest, good diet, iron, and the like.

My main object in dealing with treatment has been first to point out that there are very important conditions of the general health to be attended to in patients suffering from psoriasis; that these materially influence the disease; that the action of these conditions is quite clear; and that our treatment, directed against these influencing conditions, is not an empirical, but a most reasonable one, though the actual cause of the psoriasis itself may not be known. Secondly, to point out the necessity, whenever congestion is at all a distinct, and particularly when it is a decided feature of psoriasis, of at once ascertaining, if possible, whether there be any special condition of the general health or of blood to account for it, and if so to prescribe appropriate remedies, such as diuretics, antidyspeptics, and the like; and of adopting, in regard to local medication, a soothing treatment by emollient applications, alkaline baths, wet packing, and subsequent oily inunctions and the like, before using those particular remedies which tend to check the cell proliferation, which is the essence of the disease.

The regulation of the diet of psoriatic patients is an important part of the treatment. In acute and general cases, all stimulating fluids and seasoned articles of diet, with sugar and such things as pastry, veal, &c., are to be avoided. In the majority of cases plenty of meat is required.

Special formulæ for psoriasis other than those already indicated will be found in the formulary at No. 39, 85, 108, 109, 137, 138, 172, 180, *et seq.*

CHAPTER XIV.

DIATHETIC DISEASES.

Under the head of diathetic diseases I include the strumous, the syphilitic, and the leprous diseases of the skin. Objections have been taken to the formation of such a class, on the ground that after all, so far as the dermatologist is concerned, these diseases are characterized by the development of new formations (granulation tissue) in the skin, and they ought to be classed under the head of neoplasmata or new formations with cancer and lupus. But I am entirely of a different opinion. It is not merely to the formation of new products in these diseases, as in the case of cancer and lupus, and the removal of these products by local measures, that the practitioner has to direct his attention, but also to the general nutritive tendencies of the individual that he must have regard, and to the important antecedent disturbed states of the system that prepare the way for the formation of the new products. In lupus and cancer the local disease is in reality the disease.

In struma, syphilis, and leprosy the changes in the skin are but a small part of the whole disease, and only evidence of a disposition on the part of the tissues of the body as a whole, to become changed and disordered. In classing, therefore, leprosy, syphilis, and struma together, I do it with the express object of directing the reader's attention to the general condition which produces the local skin changes. The word "diathesis" has been, and is now-a-days even, used in a most vague sense. It signifies "a morbid disposition" of the body as a whole, to exhibit particular kinds of local morbid changes, characteristic of particular diatheses. In diatheses as I understand them, and as exemplified in syphilis and leprosy, the whole nutrition is impaired primarily by some specific influence. In the case of struma this impairment is mostly an hereditary transmission. Diatheses have each certain physiognomical peculiarities, as shown in the conformation and general nutritive tendencies of the strumous subject, and the cachexia of the syphilitic or the leprous individual.

Diatheses are evidenced by a tendency for local morbific changes of the same kind to spring up widely in many parts of the body, and by the tendency of changes of the same nature to develop again and again in the same subject. There is a complete unity of character preserved in regard to local diseases occurring in connexion with diatheses. There is another feature of diatheses that is very significant. These dispositions to particular kinds of morbid change, may be impressed upon other non-diathetic diseases occurring in diathetic individuals, and this alone seems to show that these dispositions are general and uniform in the individual in regard of any particular diathesis. The reader must have noticed already that I have constantly pointed out this fact of the *modifying* influence of diathesis upon skin diseases. The strumous habit of body especially, often modifies the more common diseases of the skin. For instance, in psoriasis the crusting is more distinct, and there is a tendency to the intermingling of pus corpuscles with the epithelial scales. So in ordinary eczema, in strumous subjects, there is more than ordinary infiltration of the skin, more pus production; the cellular tissue beneath, and the sebaceous glands are implicated; and the swelling and excoriation are much greater. This modification is due to the strumous diathesis.

The above reasons induce me to make a separate section of diathetic diseases, from which, however, I exclude lupus.

SCROFULODERMA.

This disease does not require to be dealt with very elaborately. It is "scrofula of the skin," and only a part of the general diathetic condition, which is evidenced by the ordinary signs of struma in greater or less degree of expression. As regards the skin, scrofula is generally characterized by the appearance at the outset of indolent, dull red, soft, tubercular formations, that rapidly suppurate, and are soon covered over with darkish scabs, from beneath which oozes an unhealthy pus. Ulceration to a greater or less degree takes place, with the formation of exuberant granulations at times, and the healing is accompanied by distinct scarring. The whole disease is of the most chronic character. One can scarcely mistake the strumous ulceration for any other disease; it may spread and cover a large extent of surface, and in this case the ulcerated surface is half covered by darkish irregular crusts, whilst the ulcers discharge a thin disagreeable dark pus, and granulations are flabby and pallid, bleeding freely on being touched: the edges of the ulcers are livid, and various attempts at repair are made. The mucous surfaces of the nose or eye may be inflamed and slightly ulcerated and onychia may be present. There are old scars of former strumous disease, and the whole aspect of the patient is a sufficient tell-tale of the disease.

The treatment is generally successful, and consists in the adoption of better diet, the use of cod-liver oil, iodide of iron, the phosphates of lime and iron—certainly not arsenic—and locally an astringent ointment of tannin, or acetate of lead: or mercurial plaster: or iodide of lead ointment to the indolent ulcerated surfaces. Residence at the seaside is also desirable.

SYPHILODERMATA, OR SYPHILITIC ERUPTIONS.

It would be out of place if I were to attempt to discuss the question of the origin of syphilis or the nature and course of the primary (or chancrous) disease from which spring the various eruptive manifestations of the action of the syphilitic poison upon the skin. I am only concerned in this place with the *secondary* and *tertiary* phenomena of syphilis, viz., those changes that occur in the skin and fibrous textures as the consequence of the introduction of the syphilitic poison into the system, and the influence it exercises in modifying the nutrition of these parts.

It is, from the moment that the syphilitic virus operates generally upon the system that the dermatologist, as a rule, becomes interested in the subject of syphilis. The operation of the virus gives rise, in the first instance, to fever—a true *syphilitic fever,* and coincident with the development of this fever the skin begins to be affected. But the dermatologist has to deal also with hereditary syphilis, and must be well acquainted with the features of eruptions in the hereditarily syphilized. In this case the phenomena of initial syphilis will be absent, whilst those which declare the syphilis to have already modified the general constitution at large, and to have led to special local evidences of this fact, will be present in greater or less abundance. Syphilitic eruptions may be divided into two groups, as they occur in connexion with acquired or hereditary syphilis.

But there is another group of cases which should not be lost sight of in dealing with syphilitic eruptions. These are cases in which the eruptive phenomena are not essentially syphilitic, not primarily produced by syphilis, but in which they arise as independent essences, in persons who have become syphilized, and which undergo modification by the syphilitic taint as a consequence. These are ordinary eruptions modified by the syphilitic taint.

HEREDITARY SYPHILIS.

Before I proceed to speak of syphilitic eruptions as ordinarily seen, I will deal with hereditary syphilis, and syphilitic eruptions the consequence of hereditary syphilis.

Hereditary syphilis is practically synonymous with congenital or infantile syphilis. The child, however, may be tainted, not through parental influence, but through the medium of the milk of a syphilitic nurse. Hereditary syphilis may be derived (*a*) from the mother contaminated before or after conception; (*b*) from the father (the mother being healthy); and (*c*) when the parents are both syphilized, and, as a consequence, generally in an intensified degree. This form of syphilis is uncommon before the end of the second or beginning of the third week, and it is rare after the sixth month; the usual period of its occurrence is when the child is about three weeks or a month old. No one can mistake the tainted infant. The general aspect is more or less marasmic. The child presents a shrivelled "old man"-like aspect. The skin is dirty, muddy, it has lost its elasticity, and hangs in loose folds; it is dry, often exfoliating, and, more or less erythematous about the buttocks. The cry of the child is harsh and cracked (characteristic), and "the snuffles, produced by inflammation and ulceration of nasal mucous membrane, are present." The disease is further characterized by the presence of mucous tubercles about the anus and the mouth; fissures at the angles of the mouth; ulcerations of mucous surfaces; by a high arched palate; by the inflammation of the thymus gland; various eruptions over the body, especially about the feet and hands in the form of erythemata or bullæ; a subacute onychia is possibly present; and these, together with a family history of syphilis, are diagnostic.

With regard, however, to the eruption, it is generally in the form of a dull red erythema of the hands, feet, and peri-anal region, with or without tubercular formations; but it may in cachectic subjects consist in ugly ulcerations arising out of tubercles, bullæ, or pustules.

The diagnosis of the disease is easily made by the general marasmic aspect of the infant, the palmar and plantar affection, especially if these be bullous, and the mucous tubercles occurring about the mouth and anus.

But it is not only in the very young that hereditary syphilis shows itself, but in those of older age. I believe, as the result of clinical observation, that morbid changes in the skin of anomalous forms, the consequences of inherited syphilis, are not uncommon, only that they are confounded with strumous inflammations. I have seen papular, bullous, pustular eruptions, ulcerative and gummatous disease clearly traceable to inherited syphilis in children of four, five, ten, and even in young persons of seventeen or twenty years of age. Of course the lapse of time, in great degree, neutralizes the action of the syphilitic tendency, but in those cases in which mal-hygiène, mal-assimilation, insufficient diet, and the like have reduced the individual, the specific taint often as it were vents itself in disease of the skin.

It will be observed, in regard to these cases, that whilst there are evidences of the actual inheritance of syphilis, they are not so marked, either locally or generally, as in those who show them just after birth; and whilst it is to some extent by a process of positive diagnosis that the nature of the complaint is determined, yet the diagnosis is, in great measure, strengthened by negative evidence and the inability to bring the disease to answer to the description of other and non-syphilitic diseases.

The individuals of whom I am speaking will come to the physician with an eruption presenting peculiar and unusual features, invariably, however, running an indolent and chronic course, and unattended by itching. The eruption will, perhaps, be multiform, for instance, papules and pustules and squamous patches occur together, but there is a general tendency to ulceration in the individual places. Now, this ulceration is not explained by the existence of a scrofulous habit of body, or by other common causes of ulceration, and yet there is a state of general debility, or even a cachectic appearance about the individual. He or she is generally pallid, the expression is anxious, there is a thin pinched look about the face, and especially the root of the nose, the countenance is waxy or earthy looking, and the skin may be of the same aspect. Then, very frequently the remains of interstitial keratitis are discovered, together with "pegged" teeth and scars of old ulcerations about the mouth or anus, whilst the mother or nurse may possibly give such information as will lead the practitioner to conclude that the child was syphilized at the time of its birth. I have on some occasions traced the existence of syphilitic symptoms in these cases in the mother before or just after the birth of the child. I have seen and treated mother and child, the latter being five, six, or seven years old, together for syphilis, in these unusual cases that simulate struma, with immediate benefit.

The actual eruption seen in these cases of inherited syphilitic disease in grown-up children may be papular, in which case it may be general; or it may be bullous giving place to ulceration, or pustular giving place to ulceration; or it may be essentially rupial and ulcerative from beginning to end. The diagnosis is made first by way of exclusion—other than syphilitic causes being put aside as not explaining the disease, and then by defining the existence of a cachectic condition, the nature of which is indicated by the remnants of old mischief of a syphilitic nature about the mucous surfaces, the teeth and the eyes, &c., and by the nature of the eruption itself.

The Treatment.—It should be essentially a tonic one. Good living, fresh air, rest, avoidance of fatigue, fattening up with cod-liver oil, the removal of anæmia by iron, are essential items in it, whilst the special taint is met by small alterative doses of mercurials, and by the exhibition of iodide of potassium.

I regard these late developments of inherited syphilis as very important from a clinical point of view. They are not by any means recognised items in the list of cutaneous diseases.

ERUPTIONS FROM ACQUIRED SYPHILIS.

The first result of the incoming of syphilitic poison into the system, in the ordinary course of events, is the occurrence of *syphilitic fever*. This febrile disturbance occurs from the sixth to the ninth week after the development of the primary disease. Its onset is often not marked. It is delayed in regard to time of occurrence in the case of patients who have been mercurialized, and in fact the pyrexia may be practically unnoticed under such circumstances, or the whole disease may be less severe and less general. When it does occur, there is a rise in temperature to 100° or even 102° F., but it is not so great as in the acute specific diseases. The fever lasts two, three, or four days at the outside, and is accompanied by a roseolous rash. "The blood is charged with a poisonous principle, and all the organs and structures supplied with that blood suffer to a greater or less extent. The brain evinces its suffering by mental dejection; the nerves by a general feeling of prostration and debility . . . . there is often neuralgia (nocturnal) . . . . the pulse is quickened . . . . the tongue coated, white, broad, and indented by the teeth. The fauces are more or less congested, the tonsils and soft palate being frequently swollen; there is irritation of the larynx, producing a mucous cough and often nausea . . . . the conjunctiva is congested and muddy, and the whole skin remarkable for its yellowish and dirty appearance, looking as if saturated with impure and discoloured humours." (Wilson.) The patient with syphilitic fever, I may add, is pale, taciturn, depressed. The rheumatic pains are seated in the large joints, the back of the neck, and chest; they are severe at night, and, as Ricord first noticed, may be specially sub-sternal. They are attended also at times by marked headache, which is paroxysmal. The patient may suffer from night sweats, palpitation of the heart, and sleeplessness. The syphilitic fever always leaves patients in a more or less debilitated state. They feel they have had a temporary illness, for which they are certainly the worse, and this may be exhibited by lowness of spirits, loss of flesh, tone, appetite, and the like. Of course, as I have before said, this state of things may be little if at all marked, in mercurialized subjects. After the fever, eruptions of various kinds follow, and are accompanied by changes in the mucous membranes, by deposit of syphilitic tissue in the fibrous structures, in the bones and the internal organs.

Syphilodermata generally exhibit the same elementary lesions as ordinary eruptions; they are erythematous, papulous, and squamous more especially, but also bullous, tuberculous, vesicular, pustular, &c. They, however, possess certain special characters which are generally mentioned in text-books, and before proceeding to give the features of the several forms of eruption in detail I will enumerate these features. They are as follows:—

1. There is a *history of syphilitic inoculation*, which tells its tale by the syphilitic fever (due to the circulation of the poison) a moment ago noticed; and, in addition, by the presence of cicatrices, indurations, scars, and stains about the penis and groin, in the seat of chancres and buboes.

2. Syphilitic eruptions are *symmetrical*.

3. *Their colour* is peculiar. It is described as copper-coloured; in reality "*a reddish yellow-brown.*" (Wilson.) It is dull red at first, and becomes coppery after a while, and as the eruptions vanish, a dull red or yellowish dirty stain remains for a varying length of time. In the early stages of disease the tint may be violet, but this soon becomes replaced by the coppery hue. It is well marked in the tubercular forms, and at the circumference of ulcers and pustules.

4. *Their form* is peculiarly circular. This feature is not perhaps of much moment *per se*, but in conjunction with other points it affords some aid in diagnosis. It may be destroyed or prevented by the confluence of other patches, but even then the typical form can be recognised in the component parts of the patch of disease. During the progress of syphilitic eruptions there is a tendency on their part to an interchange of characters the one with the other, a papule becoming a pustule, a pustule a rupial sore, and so on.

5. The scales in syphilitic eruptions have some peculiarities. Syphilitic *scaly* eruptions are composed usually of small circular spots. Scales or squamæ are thin, oftentimes very fine, gray, and few in number; fewer and lighter than in non-syphilitic cases.

6. The crusts and ulcers are peculiar. Crusts are thick, greenish or black, and firmly adherent. Vesicles are flattish and do not readily rupture. Ulceration is a common feature; the ulcerated surface is ashy gray, covered with a pultaceous substance, and bounded by sharply cut edges. Cicatrices are whitish and reticulated, or dull and brownish, leaving in their place on disappearance a yellowish stain. Fissuring is marked in the squamous forms. The horse-shoe form of pustulation or ulcer is very characteristic. A serpiginous mode of increase in eruptions is suspicious.

7. Syphilitic eruptions are, moreover, as the rule, unattended either by pain or itching. With the exception of mucous tubercles and some forms (moist) of infantile syphilis, syphilodermata are said to be generally unaccompanied by heat or pruritus during their existence. I must say there are exceptions to the rule. In syphilitic lichen, and even erythema (roseola), the pruritus may be marked. In the tubercular forms, just prior to ulceration, the process of softening renders the tubercles sometimes painful and tender.

8. *Polymorphism* is a feature of syphilitic eruptions. This is very characteristic of syphilitic disease. Several different kinds of eruptions often co-exist, and this is a rule of general applicability. It is no unusual thing to see papules, pustules, and tubercles co-existent in the same syphilitic subject, and, as before remarked, one form of eruption may gradually assume the characters of another.

I now proceed to give the salient features of the various syphilitic eruptions in detail, according to the common arrangement, but the reader will find some general remarks upon these eruptions and their nature and mode of production, from my own point of view, later on.

Now the eruptions consecutive to the primary disease are divided into *secondary* and *tertiary*. There is no distinct line of demarcation between them; the division is an arbitrary one, secondary eruptions being those which are more superficial and of earlier occurrence, tertiary those that occur later on in the disease, and consist in affections of the deeper parts—*e.g.*, the bones, fibrocellular tissue, and are accompanied very frequently by ulceration, and a markedly cachectic state of health.

Syphilitic eruptions begin to show themselves at the same time that the syphilitic fever occurs—viz., from six weeks to two months after primary inoculation with the syphilitic poison. The first and earliest form of syphilis of the skin is the

EXANTHEMATOUS SYPHILIDE, OR SYPHILITIC ROSEOLA.

This is one of the earliest secondary symptoms of constitutional syphilis. It occurs generally between the sixth and ninth week after the reception of the primary mischief. It is preceded by pyrexia of mild character, prostration and very frequently more or less irritation of the mucous surfaces—*e.g.*, redness of the fauces, sore throat, &c. The syphilitic fever is of greater or less degree. The attack very commonly follows a debauch or over-heating of the body, or fatigue, or some extra bodily exertion. The eruption commences as little round spots of a pale-red colour, varying in size from that of a split-pea to that of a sixpence or a shilling and more, with very well-defined edges. These may appear very suddenly, often in the course of a single night, acquiring in a little while a perfectly pale-rose tint. The spots are unattended by itching, and observed usually, most perfectly and abundantly, on those parts which are well covered and kept warm by clothing, especially flannel; hence particularly on the trunk. The little patches may be slightly elevated, isolated, and round; they fade, but do not disappear on pressure. They do not itch. Sometimes they are scattered pretty freely over the trunk, the upper part of the chest (especially the lateral parts), and over the back. They may be visible about the face. When the rash fades, an occurrence that takes place in three or four days, or not for some little time, it always leaves behind a branny-like or more deeply-coloured stain; the epidermis desquamates in largish but thin scales. This latter condition becomes more decided after a few days. What strikes one is this: that there is evidently a large amount of scattered eruption without apparent cause, without local irritation, and only the slightest febrile disturbance, the eruption leaving behind a dirty staining. The coppery hue is evolved out of a roseola, which may be somewhat dusky on its first appearance. In ordinary roseola the tint is vivid, and quickly disappears. The stains left by syphilitic roseola, when the congestion has disappeared, constitute the so-called *Maculæ Syphiliticæ*, about to be noticed. In syphilitic roseola there is usually not only redness of the fauces and tonsils, but slight ulceration. Enlargement of the glands of the cervical and inguinal regions follows, and alopecia occurs coincidently in many cases. The diagnosis must be made between this and ordinary roseola, in which concomitant symptoms of general infection are absent: and roseola from copaiba, which is attended by most decided itching, and attacks the wrists and hands and arms mainly. I have known patients with syphilitic roseola declared to be suffering from impending variola when complicated by roseola variolosa, measles, and typhus. But in the first instance the temperature will be much too high, the patient will look too ill, and the headache and feeling of illness be much too great for syphilis, whilst the roseolous eruption will be purpuric rather than anything else. The gravity of the symptoms in the acute specific diseases has been too marked for syphilis, and all doubt has been cleared up in a few hours by the course of the disease.

I have said that syphilitic roseola leaves behind certain pigmentary stains. These stains are common after all forms of syphilitic eruption, but I cannot find a more convenient place to notice them than this.

SYPHILITIC STAINS, OR MACULÆ SYPHILITICÆ.

These stains may be, as before observed, a remnant of any form of syphilis, but mostly of roseola. The little roseolous spots, which soon fade, assume a dirty brown aspect, and subsequently become of a rather lighter hue. These maculæ are neither elevated nor itchy, they are circular; in size they range between that of a fourpenny-piece and that of a florin; they are scattered over a large area, and are usually isolated, but occasionally confluent, forming sometimes bands; they do not disappear on pressure. Their especial seats are the neck, the breast, the face, especially the forehead, and the arms. In children the maculation occurs in a more general form and is so complete that the whole surface has an earthy look. In acquired syphilis, in adults, there is oftentimes a significant staining, particularly well seen about the forehead, but also over the whole body, as the result of cachexia, but nowhere is it better marked than in the face, which looks as if sunburnt. Maculæ syphiliticæ are unattended by desquamation. It has been said that they constitute a primary form of disease, but it is the rule that they commence as roseolous spots, though the red blush may be very ephemeral and escape detection. They can only be confounded with pityriasis, but in the latter there is desquamation, itching, elevation, and absence of the copperish hue, and a want of circular form. *Chloasma* is attended with itching; the colour is fawn, without any shade of copper tint; the surface is elevated, rough, and desquamative, and the microscope detects parasitic elements; chloasma too is peculiar in its seat. Syphilis never produces such staining as exists in chloasma or leprosy. In the latter it is oftentimes marked over large tracts of the skin.

PAPULAR SYPHILODERM.

Different authors make very different divisions of the phases of papular syphilis. Generally two varieties are described, the acute and the chronic. It appears to me that this is a very unnecessary and useless division. I make two varieties of papular syphilis: the first in which the disease begins by follicular hyperæmia, this being followed by a deposit about the follicles and the formation thereby of papules. The second in which solid little growths of syphilitic granulation tissue are found in the skin, and these papules may be lenticular in form and shape or flat and largish—*i.e.*, papulo-tubercular.

The former, answering to the acute form or the syphilitic lichen of authors, occurs generally some five or six months after inoculation with the syphilitic poison.

It consists in the development of small red points that soon become papules, which are packed closely together. The papules are seated upon the face especially, but also the trunk (on both aspects), the neck, and less frequently the limbs; they become covered over with fine grayish scales, and occasionally become pustular or ulcerate. The eruption is scarcely successive, for it arrives at its full extent within a couple of days or so: but it may sometimes be made up by several outbursts of the disease. Slight febrile disturbance precedes the development of the rash. When the acute stage is passed, the disease appears to be constituted by little dark points or papules seated upon a somewhat dull-red base; in a few more days this dark hue is replaced by a well-marked copper colour, and more or less desquamation. The papules are collected in little groups which are very significant of the disease. The disease lasts a month or so, leaves behind more or less staining, and little cicatrices or pits, which are very characteristic. This form of syphiloderma then, commences with congestion of the follicles and subsequent deposition which takes the form of papular elevations; the peculiar coppery tint is masked at the outset by the congestive redness, and only shows out markedly when the latter disappears.

The chronic form of lichen possesses a slower and more indolent course, simply. The papules are primary solid formations, and not follicular. They are large, numerous, flat and broad, copper-coloured, without distinct areolæ, local itching, pain, or heat; they are seated on the outer sides of the limbs, the forehead, the trunk, and even the scalp. The papules are successive in mode of appearance, and on their subsidence leave behind coppery stains. The papules often become pustular.

The *Diagnosis* of papular syphilis is generally easily made. A prior history of syphilitic inoculation; the general distribution of the eruption, its coppery hue, and its tendency to become tubercular; the absence of pruritus and pain; the general cachexia of the patient, and the evidence of concomitants—*e.g.*, mucous tubercles, roseola, nodes, sore throat, &c., suffice.

VESICULAR SYPHILODERM.

The syphilitic eruption, in which vesicles form the leading feature, is rare. It takes the form of herpes in the vast majority of cases, but it may be varioliform or impetiginous.

Syphilitic Herpes.—In the first place the patient has all the general symptoms of syphilitic inoculation with coincident sore throat: and the vesicular form of the syphilitic eruption shows itself at a tolerably early date, about six months or so after the receipt of primary mischief. As far as I have observed the disease, it consists of patches of herpes of the ordinary character, save that they are altogether more indolent, and lack heat and itching; their edge is well-defined and copper-coloured. The vesicles may abort and oftentimes quickly dry up. The patches, moreover, increase by centrifugal development. The crusts which form are largish and adherent, and each patch may last a good time, longer than in ordinary herpes. In all cases a copper-coloured stain is left behind. This form of syphilis of the skin is found on the face, limbs, trunk, and penis, and often in association with other forms of herpes. The herpetiform syphilide may occur in the form of a ring with a clear centre. I have seen it in the seat of zoster as a *syphilitic herpes zoster*. In this case the indolent painless course and the long duration of the disease, the copper-coloured base, the concomitance of syphilitic general symptoms, left no doubt about the nature of the disease. Two cases of this kind I can call to mind. In one case the herpetic eruption started about the buttock, and ran down towards the thigh at its back part. Syphilitic herpes of the penis is by no means uncommon. M. Doyon, of Lyons, has published a little *brochure* on recurrent herpes præputialis of syphilitic origin. He remarks very truly that "Recurrent herpes is often mistaken for chancroid. It is the fourth in order of frequency amongst venereal affections, gonorrhœa occupying the first place, then chancroid, and then syphilis. It uniformly follows some primary venereal affection, dies away, and then reappears for many years together about every two months. The group of vesicles appear in close proximity to the site of the primary affection. Each eruption lasts about five or six days, is unaccompanied by any febrile symptoms, and disappears by desquamation. It is more frequently a sequela of chancroid than of gonorrhœa, and of this than of true chancre. Its first appearance is usually about three weeks after the termination of the primary lesion. Each group of vesicles has a diameter of somewhat less than an inch, and the successive crops reappear very constantly in the same place, the seat of election being apparently the corona glandis or præputio-balanal fold. Its outbreak is often induced by excess in drinking, a few wakeful nights, want of cleanliness, and, above all, by sexual intercourse. It may persist longer than five or six days, and he records a case where the small ulcers left by the vesicles lasted eighteen months. As regards the diagnosis, herpes præputialis is not likely to be confounded with any other affection than a soft chancre, and from this it is distinguished by the itching and pain which accompany its outbreak, the number and mode of grouping of the vesicles, the presence of an inflammatory areola round each, the non-contagious character of the disease, and, finally, the non-occurrence of bubo. M. Doyon appears to consider that the origin of the affection may be traced to a primary or to an inherited *dartrous* diathesis, or that state of constitution in which eczema, lichen, pityriasis, and other similar cutaneous affections are likely to develop." The herpes is immediately due to the irritation of the nerve trunks in a syphilized subject. Syphilitic herpes is known by its persistency, the indolence of its course, the small ulcerations left, and the concomitants.

Varioliform Syphiloderm.—In this variety the vesicles are about the size of lentil-seeds, disseminated and intermingled with little bullæ, which are pointed, and now and then umbilicated. They possess the characteristic areola, crust over in a short time, beneath which a copper stain and perhaps ulceration exists.

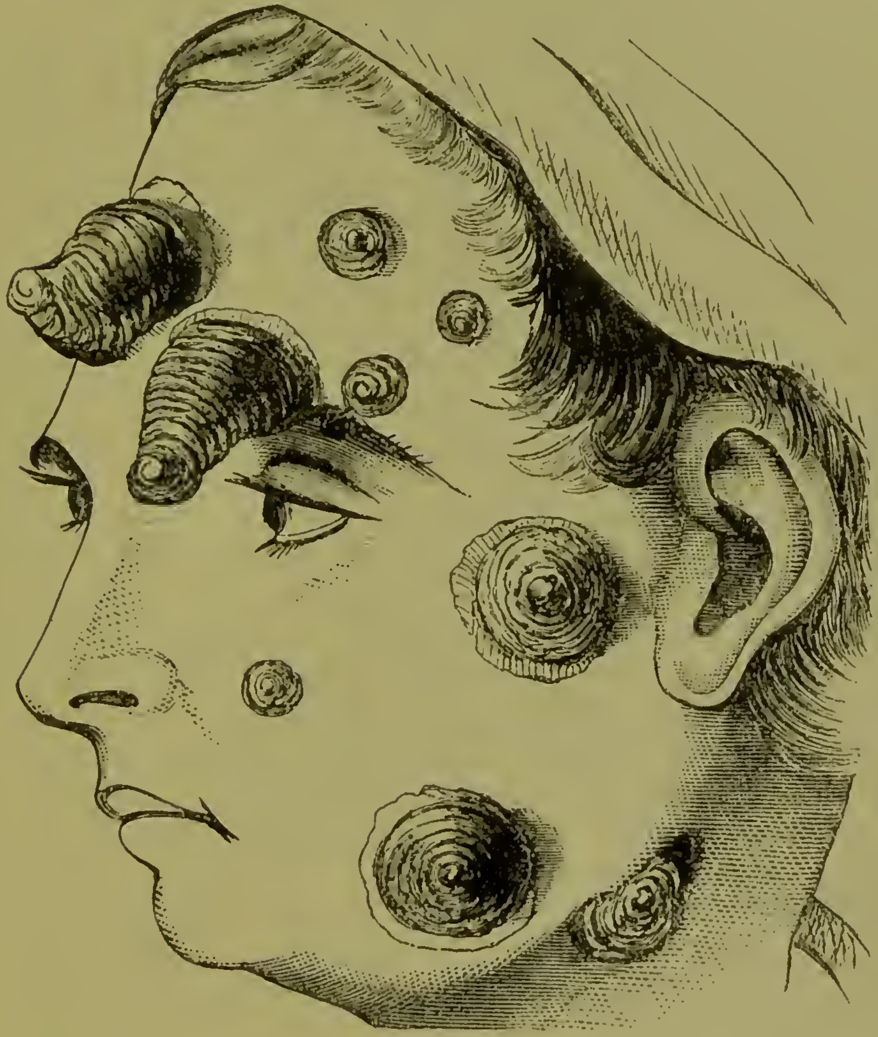
Syphilitic Eczema.—Some writers make a syphilitic eczema. I do not believe in the existence of such a disease. Eczema may occur in a syphilitic subject, but I have never seen a syphilitic eczema. I have, however, seen about the face a condition which might have been designated syphilitic impetigo. That is to say, quasi-rupial sores may run together *en masse*, the result being the production of a thick greenish-yellow layer of dried secretion, like the crust of a marked impetigo, which covers over an ulcerating surface beneath. But in this case, though the face is caked over like crusta lactea, the origin is not from vesico-pustules as an impetigo, but rather as a rupia. There is a raised copper-coloured edge, and ulceration, going on beneath the crust, which may destroy deeply and widely. I have had two cases of this kind in which the nose was half destroyed, and which yielded readily to anti-syphilitic treatment energetically practised. One patient was sent to me for severe impetigo faciei: the whole nose and cheeks being more or less covered by free, yellowish, thick crusts like an impetigo scabida, but there was clearly something more than ordinary impetigo present, as shown especially by the presence of marked ulceration, and a general history and aspect of syphilis.

BULLOUS SYPHILODERM.

Under this head are ranked rupia and pemphigus.

Rupia (see fig. 27) is known by the development of small flattish bullæ (surrounded by a faintish areola, perhaps by none at all), few in number, containing at the very outset transparent serosity, but very speedily a mixture of blood and pus, giving place by desiccation to thick scabs, beneath which is more or less unhealthy ulceration, yielding a nasty, dirty, fœtid discharge. The crusts are diagnostic; they are dark, stratified in such a way as to be conical, like an oyster-shell. According to my experience small ecthymatous pustules may be the starting-point of rupia.

Fig. 27.



The face shows in the smaller and less marked spots *R. simplex;* in the two projecting masses about the forehead *R. prominens.*

The rupial spots may be seated on any part of the body, the face, head, limbs, or trunk. The mode of the production of rupial crusts is readily understood. Beneath the crust first formed ulceration goes on, the ulcerating surface giving out a discharge that dries and augments the crusts from below. And as the area of the ulcer increases the successive layers of dried secretion will be more and more extensive, so that the rupial crust finally comes to be made up of successive layers of dried discharge, of gradually augmenting size from above downwards—hence the conical form of the crust. It is only in syphilis that ulceration is found gradually extending in all directions, and secreting after the manner stated: so rupia is always syphilitic. Now varieties of rupia have been made according to the size and shape of the crusts and the degree of ulceration:—if the spots are of fair size the disease is termed *rupia simplex* (fig. 28); if the crusts are large and prominent, *rupia prominens;* if the ulceration is marked and the patient cachectic, *rupia escharotica.* But these are merely fanciful elaborations, and the student need make only one *rupia.*

Syphilitic Pemphigus.—This form of syphilis of the skin was at one time denied an existence, but it does occasionally occur. It is seen in children who are congenitally syphilitic: and as part of the manifestation of syphilis in those who exhibit the signs of constitutional tainting—*i.e.*, earthy hue of skin, snuffles, wasting, mucous tubercles, lepra, &c. In such children the pemphigus is observed about the hands and feet especially, the bullæ being abundant, their contents puriform, and they possess a tendency to ulcerate more or less deeply, the ulcers having a copper-coloured areola, and a nasty, dirty, foul surface, with thinly cut edges. When the disease is congenital, it is seen most frequently before the end of the first fortnight of existence. Sometimes the bullæ are not well marked, but scabbing is marked, the disease exhibiting a close relation to rupia; indeed herein is seen the link as it were between rupia and pemphigus. The ulcerative tendency displayed by syphilitic pemphigus is no doubt dependent upon the cachectic state of nutrition brought about by the syphilitic poison, and it is exhibited specially by those who are most cachectic. Of course non-syphilitic pemphigus may occur in the young, but in this case the concomitants of constitutional infection are absent.

Syphilitic pemphigus undoubtedly occurs as a rare thing in the adult in connexion with other evidences of syphilis.

PUSTULAR SYPHILODERM.

In my opinion there are three primary and one secondary forms of syphilitic pustules. The primary forms are syphilitic acne, syphilitic ecthyma, and syphilitic inflammation of the upper part of the follicles. The secondary form is the papular or tubercular syphilis which pustulates. I need only say of the latter that the pustules are found about the forehead and face, and on the trunk; the pustules are successive, numerous, isolated, and scattered; soon acquire a coppery hue, and are indolent. Sometimes they are flattened, at other times conical, the points or summits being purulent; thick greenish crusts may form, and beneath them is ulceration depressed in its centre, and leaving behind a more or less marked cicatrix and copper-coloured stain; this secondary pustulation is often associated with other forms of syphiloderma and preceded by febrile disturbance. It is remarkably indolent sometimes.

I now have to speak of the primary forms of pustular syphilis. Of course in all these cases the general condition of the patient and the concomitants, sore throat, nocturnal pains, &c., show that the patient in whom they occur is syphilized.

Syphilitic inflammation of the follicles explains itself. The disease attacks the portion of the follicle above the opening of the sebaceous glands, and it is seen about the scalp and also the side of the face, most frequently. It occurs pretty early in the course of syphilis, and the spots are marked by a hardish base, a distinct areola presently copper-coloured, an indolent course, and the occurrence of cicatrices, with dull stains.

Syphilitic acne is common. In it the entire sebaceous glands are usually involved. This acne occurs as the sole form of eruption, and it is then seen about the face, especially the sides of the face, on the scalp, and also the trunk. Unlike simple acne, it leaves the cheeks oftentimes free, and is not limited to the face and back. It also occurs in a scattered form in connexion with other forms of syphilitic eruption—ex., papular syphilis. The acne spots are the size of lentils or small split-peas; they are often varioloid in appearance. They have a hard base, an indolent course, dark adherent scabs oftentimes, and they leave distinct cicatricial pits behind and dark-coloured stains; but the hard bases and subsequent cicatrices are very characteristic.

Syphilitic ecthyma is seen about the trunk, but especially the limbs, the lower more than the upper, and occasionally the head. The pustules are phlyzacious, scattered, with a coppery base, and are indolent. They are scabbed over with dirty brown or blackish scabs, covering ulcers with indurated and dark edges, which on healing leave behind cicatrices and characteristic stains. The disease may commence as a quasi-vesicular (bullous) disease, each vesicle having a red base, quickly enlarging, pustulating, and breaking out into obstinate ulcers; the crusts are peculiarly thick, and very adherent. I have seen syphilitic ecthyma run on into rupia of a fairly marked kind.

The relation of ecthyma, pemphigus, and rupia, of syphilitic origin, is very close indeed.

The Diagnosis.—When papular or tubercular syphilis pustulates and assumes the aspect of ecthyma, no difficulty can arise in diagnosis. Syphilitic ecthyma is distinguished from *simple* ecthyma by the special history of the case, the concomitance of other syphilitic lesions, the coppery hue, the thick black crusts, the foul ulcers, the depressed scar, and the absence of a livid areola; syphilitic from simple *acne*, by the ulceration at the apices of the pustules, and the cicatrices left after the healing of the pustules, by the absence of pain, the indolent, non-inflammatory aspect of the pustules, and by the antecedent and concomitant histories.

SQUAMOUS SYPHILODERM.

I cannot, in accordance with general custom, describe the scaly syphiloderm as a syphilitic psoriasis. In this form of disease little growths of syphilitic tissue appear, not in an elevated form as in tubercular syphilis, but as it were in a more diffused manner, forming little circular patches which have a scaly aspect, because the growth beneath disturbs the normal formation and disposition of the epidermis, and so gives rise to scaliness, in the first instance, but exfoliation of syphilitic infiltration subsequently. Since the patch is formed, not by hyper-production and heaping up together of epithelial cells, but by new tissue, I do not think it right to employ the term syphilitic *psoriasis*, for no psoriasis exists.

This squamous syphiloderm—inasmuch as people are not generally syphilized till puberty—does not commence as the rule till after that time. It assumes the aspect of psoriasis *guttata;* that is to say, there is a disposition to a circular form, and the eruption is made up of solitary isolated spots, the size of a pea, a shilling, or less, covered by squamæ, which, unlike those of ordinary psoriasis, are not large and silvery, but hard, adherent, and grey, and seated upon a copper-tinted basis, which is smooth and shining, not elevated, not papular, not red, as in non-syphilitic psoriasis; a white rim surrounds each patch, and this is formed by the loosening of the cuticle around the circumference. These spots are scattered over the arms, breast, face, and trunk generally, but the elbows and knees are free from them, and when the palms of the hands or soles of the feet are diseased, the skin is dirty, harsh, scaly, cracked, and fissured. These palmar and plantar diseases will be noticed specially by-and-by. Hardy has described a syphilide cornée; it is merely plantar or palmar psoriasis, in which the epidermis hardens very much, and the coppery areola is well marked. The squamous syphiloderm is often intermingled with the papular and tubercular varieties of eruption.

Diagnosis.—There are seven leading features which, taken together, are positively diagnostic of the squamous syphiloderm. (1) If limited to the palms of the hand and soles of the feet, it is in the majority of cases syphilitic. (2) The disease does not attack the elbows and knees by predilection, as in the simple forms. (3) It is generally displayed in little circular patches, which are isolated and not confluent. (4) The patches have a peculiar whitish line circumscribing them, due to the elevation and attach-ment of the cuticle. (5) The squamæ are thin, small, grey, and repose upon a coppery base. (6) There are generally significant co-existences of specific infection. (7) Copper-coloured maculæ follow in the wake of the disease.

In non-syphilitic psoriasis, the scales are numerous and loosely packed together over an hyperæmic corium, which bleeds if the scales are removed; whereas, in syphilis, the scales are few, and lie on a palish red infiltrated corium. (*See also Palmar Syphiloderm, to be noticed presently.*)

TUBERCULAR SYPHILODERM.

This is a decidedly common form of secondary syphilis. Its tubercles for practical purposes may be regarded as an exaggerated condition of papules. They vary a good deal in size (from that of a pea to that of a nut), but they are always indolent, and may occur about the face, especially the nose, forehead, and side of the head, but also any part of the body. They sometimes are so closely aggregated together in various localities as to give rise to thickened patches. The papules possess a coppery tint, and are flat and hard; they are formed by syphilitic granulation tissue. When they ulcerate, which they do when large, they become covered over by thick and black adherent crusts. Now different appearances are produced according as the number of tubercles is large or small, and according as they occur over a limited or a wide area. But in all these cases the essential nature of the tubercle—a solid, firm, fleshy elevation—can be recognised: where patches form, of course at the extending edge of disease.

The simplest form of tubercular syphilis consists in a few tubercles localized to some particular region—for example, the face, or the nape of the neck, or the shoulder; and I may be pardoned for calling attention to one diagnostic feature of a negative kind which the tubercles present, that they cannot be made out to be enlargements of the follicles (acne, or follicular hyperæmia) of the skin, they present no central punctum—they are indeed neoplasms. In the tubercular syphiloderm of this simple character the tubercles may slightly scale over, and then—or without scaling even—gradually lessen and disappear, leaving behind a slight stain or slight pitting: or they may increase in size, and suppurate: or run together into a small patch. In the next degree of intensity of the eruption, groups of tubercles are found here and there, forming distinct patches, the edge being bounded by well marked tubercles, the whole surface of the patch being scaly. The central portion may recover its normal appearance, save that it is dirty-looking, and somewhat atrophied, but there is a ring of tubercles as it were—hence the popular mistake of regarding the disease as ringworm. In some cases, indeed, the disease may make its appearance in rings, made up of circular lines of aggregated tubercles of granulation tissue, and patients will tell the physician, without being asked, that the disease began like a ringworm; the dull coppery colour, absence of itching, and the general condition of the patient being at once significant of syphilis. Frequently the circumferential edge extends by the centrifugal enlargement of the old, or the springing up of new tubercles; the size of the patch augments, and the increase of the growth of new tissue, or infiltration, thickens the patch. In the most exaggerated form of tubercular disease, the whole trunk may be affected, and then there is a mixed character about the eruption. It is made up in part of disseminated and distinct tubercles, small circular patches of aggregated tubercles, and lastly, large infiltrated patches, of greater or less degrees of thickness, in which the individual tubercles cannot be made out except at the very edge or around the edge. Now such patches are covered by thinnish, more or less adherent scales, and hence the aspect is, to some extent, that of psoriasis. In certain places the disappearance of the tubercles has left behind distinct scars, of greater or less extent, and perhaps from their edges the formation of tubercular formations spreads away into the healthy tissue. The whole surface is muddy and cachectic; the patient suffers from mucous tubercles; gummata perhaps; ulcerated tongue, tonsils and throat, alopecia; and other grave evidences of syphilis, and these concomitant conditions vary in degree in different cases.

The tubercles therefore may be disseminated, or arranged in the form of rings or groups, or crowded together into patches. But further changes than those just described may take place in tubercular syphilis, and they are mainly two—suppuration and ulceration. In regard to the former, it is only necessary to say that the tubercles in certain subjects, instead of being resorbed, break up into unhealthy pus, and give out an ichor that dries into dark adherent crusts. Tubercular syphilis frequently ulcerates; indeed, it has been usual to divide this form of syphiloderm into *the ulcerating and the non-ulcerating*; but these are not absolutely separated the one from the other. The *non-ulcerating* is the tubercular syphilis, as above described, the tubercles disappearing by resorption. The *ulcerating* form is simply ordinary tubercular syphilis running on to ulceration.

In ulcerating tubercular syphiloderm the ulceration in one instance may be deep, and is called the *perforating* form; in the other superficial, the *serpiginous* form. The first condition is the syphilide tuberculeuse perforante (perforating or deeply ulcerating tubercular syphilide). In it the tubercles are large, few, livid red, with a copper-coloured areola, having a tendency to ulcerate deeply, with accompanying pain and discomfort; the ashy-coloured and foul ulcers, which may become confluent, crust over, the ulceration meanwhile eating more deeply, the crusts being repeatedly shed and reproduced. In this way the nose may be destroyed and lost, the disease resembling lupus : the disease is most common about the face. Severe ulceration is generally a symptom of tertiary syphilis, and accompanies marked cachexia, indurations of the periosteum, syphilitic caries, &c. When the ulceration is superficial it creeps along the surface, and then occasions what is called the serpiginous syphilide. It differs from the perforating variety chiefly in the fact that the ulceration takes place in a superficial manner, creeping over the surface; the form varies somewhat—it may be in bands or circles; the surface of the ulcer becomes covered over with blackish crusts, which fall and are reproduced from time to time; the tubercles themselves are large, and, if the ulcers heal, distinct livid cicatrices remain behind; if the tubercles become confluent, the ulceration is more marked. Another ulcerative condition is the fissured tubercle; it is smallish, but the seat of a linear ulcer, or a fissure in its centre; it is accompanied by a good deal of pain, and a thinnish ichor is exuded from it; it is seen about the side of the nose, lip, scrotum, and anus.

A syphilitic lupus or lupiform syphilis has been described. The characteristic of lupus is the attempt at repair, which is so far successful that it gives rise to peculiar indelible cicatrices, and when syphilitic tubercles are accompanied by a dull-red tint and succeeded by deep ulceration, with more or less scabbing, sanious discharge, and attempts at repair, ending in partial cicatrization, the disease has been termed syphilitic lupus; but the term is a bad one, as likely to confuse between lupus and syphilis.

Diagnosis.—There is no difficulty in this. When an individual has tubercular syphilis, the evidences of active syphilis about him are mostly many and conclusive. The cachexia, the ulcerated tongue, the nocturnal pains, alopecia, buboes, gummata, mucous tubercles, and other signs and indications of syphilis are present to lead to a correct diagnosis. But the eruption itself is diagnostic. I know of no tubercle like the firm, not very vascular, copper-coloured tubercle of syphilis. Comparison is sometimes made between lupus and syphilis, but in lupus the tubercle is softer, more vascular, gelatinous-like. The lupus does not occur as a scattered eruption. It does not exhibit the same tendency to crust in connexion with sometimes slight infiltration, as does syphilis—a point upon which I lay much stress; the ulcerations that succeed do not possess the features of syphilitic ulceration, to be noticed presently. The only difficulty arises where there is a single patch, or a patch or two, with no concomitants of syphilis. In such a case, if the tubercles are only slightly vascular and hard, I regard the case as one of syphilis, the more so if, in addition to a not excessive degree of infiltration, there is any tendency to ulceration and free crusting, because slight lupus does not ulcerate. If the disease has commenced in late life, that alone signifies that the disease is not lupus. But, after all, the history and concomitants, and the plentifulness of the eruption, suffice to mark the disease as syphilitic as the rule.

Syphilitic Ulceration.—This may arise from ulceration of previously existing tubercular, or pustular or bullous syphilodermata, or as a consequence of the softening up of *gummata*, which are masses of syphilitic granulation tissue formed in the subcutaneous cellular tissue, in the form of hard indurated nodules, the size of from nuts to walnuts or more. If ulceration takes place the surface over these gummata becomes red and tender prior to ulceration, which is very indolent: and the resulting sore has no tendency to heal, but gives exit to a little fluid, scabs somewhat, and is not painful.

Diagnosis.—Syphilitic ulcers are likely to be mistaken for lupus; the former have sharply-cut edges, and the tubercles around are *hard*, smooth, dryish, dense, shining, and copper-coloured. They occur in people of *middle age*, are accompanied by concomitants of syphilis, and the ulcers are *foul, dirty, ashy, exuding an ichor*, and the tissues around are infiltrated and indurated; in the lupus ulcer the edges are not sharply cut, but thickened and rounded; there is no copper colour; the tubercles are *soft*, red, *quasi*-gelatinous; the parts around are painful and œdematous; it often occurs about the face alone *in young people;* there is an entire absence of syphilis, and the ulcers are *clean and dry*.

Mucous Tubercles.—Just as there are growths and eruptions of the cutaneous, so are there similar affections of the mucous surface. It is only needful to refer now to those changes which are observable to the eye, and which are seated especially at the junction of the skin and mucous membrane, *i.e.*, at the orifices of the natural outlets; and not only may these growths form here, for any part of the surface which is habitually bathed in secretion, and acted upon by heat, is liable to the same kind of disease. This form of syphiloderma has been called vegetative syphilis, and is noticed mostly in the female about the vulva; in the child about the mouth, buttocks, and arms; and the penis in the adult. There are two species—mucous tubercles and condylomata (warts). Mucous tubercles (see Elementary Lesions) are circular flat elevations, of soft look and feel, and may be described curtly as warts formed out of mucous membrane; they become more or less irritated, the parts around being also inflamed, at the same time that they give exit to a faint, pale, viscid secretion: they may ulcerate, or become pedunculated, when they are to all intents and purposes condylomata; they frequently spring up in the seat of an old sore, and always cause considerable local discomfort. Condylomata are simply pedunculated little warts, occasionally sessile, differing from mucous tubercles in the fact of being firmer and not giving rise to ulceration or secretion.

Syphilitic Alopecia is pretty common; it occurs in connexion with the syphilitic fever in the early part of the disease, or the hair may thin out as a consequence of the establishment of cachexia, or it may fall off in patchy form as the result of ulceration. I have also seen it occur very commonly as the result of a seborrhœa set up, as it seemed to be, by slight infiltration about the sebaceous gland and hair follicles. The diagnosis is made by a process of exclusion, and the positive existence of latent or developed signs of syphilis.

Syphilitic Onychia may attack the structure of the nail itself, or the matrix specially. In early infancy (under a year), sub-acute onychia attacks several fingers at one time in conjunction with iritis, otitis, snuffles, &c. Onychia is sometimes a secondary symptom in the adult: it ends in exfoliation of the nail, and is not unfrequently attended by a papular rash, &c., over the surface of the body. The local symptoms are pain, redness, swelling around the base of the nail, followed by suppuration and ulceration of the matrix, with loss of the nail. Mostly the matrix escapes, then there is little pain; and as Mr. Hutchinson described it to the Pathological Society, it begins at the root, where a "semilunar furrow is seen extending across it; the outermost layer is destroyed over the entire lunula, and a ragged border overhanging that part is presented by the distal portion; by degrees, as the nail grows, the diseased margin is pushed further and further on. The nails appear dry and brittle in texture, as is shown by the fissured and broken condition of the free edge." Several nails are attacked at the same time and that symmetrically; the progress is very indolent indeed. I have seen now on several occasions the nail become the seat of a painful tubercle, which raises up the nail from its bed. I take it that this is merely the consequence of the presence of syphilitic infiltration in the matrix; if the tubercle increases in size the nail is more and more detached, the whole nail-bed gets painful, the finger becomes club-shaped, and it appears as if the bone would necrose, but I have never seen the latter occurrence except as the consequence of onychia.

In other cases of syphilis, the nails simply atrophy and are lost, as the result of cachexia, or they become ill formed, and friable, and stunted.

Palmar and Plantar Syphilitic "Psoriasis," and Erythema.—These are important manifestations of syphilis in the skin, and for that reason I notice them specially. Now erythematous inflammation of the palms of the hands and the soles of the feet, of dull red colour, accompanied by slight infiltration and a certain amount of desquamation, or rather flaking off of the epidermis, is frequently part and parcel of congenital syphilis. Such a condition may also occur in the adult at an early stage, but my experience is that palmar and plantar mischief occurs later on in connexion with symptoms of long-standing disease, and generally speaking it takes the form of tubercular syphilis. Now there is one important clinical statement that I venture to make here—that syphilitic disease of the palm of the hand and the sole of the foot begins in these parts from a solitary spot generally in the centre, and spreads over their area by centrifugal growth, and is peculiarly localized to these parts, whereas non-syphilitic disease *spreads to* the palm and sole from adjoining parts. As the rule a brownish spot, or, it may be, corn-like but reddish induration, or button-like infiltration, appear about the centre of the palm or the sole as the case may be; it may scale over. It increases in size, and may crack; by-and-by when a patch is formed it looks like psoriasis, but the central part heals up, only being a little thinned, whilst the epidermis forms a whitish rim around, peels off and curls back, in fact, from the extending infiltration. The patch enlarges and creeps farther and farther over the surface, sometimes in the form of rings, the central part clearing as regards the redness, but remaining dry and discoloured.

The surface of the disease may not only be cracked, but tender and more or less irritable. Perhaps when the whole palm is invaded, the disease may break up into islets of disease by the healing of the palm in parts only; and then—*i. e.*, in connexion with old-standing disease, little knotty tubercles may appear about the fingers, especially the index finger, on the side next the thumb; but not here and alone, the knuckles may be attacked, and the parts are dry, harsh, knotty, reddened, and fissured more or less.

Another phase is not a red erythematous or tubercular condition of the derma of the hand and foot, but a hard, corn-like general thickening with fissuring. There is in connexion with the forms of disease now under notice concomitant evidence of syphilis and particularly ulceration of the tongue—in fact, a thickened and reddened scaly state of the palm of the hand, or sole of the foot, with a sore tongue, is absolutely certain to be syphilitic and nothing else; and this leads me to remark that I have never seen a case of uncomplicated non-syphilitic palmar psoriasis. I have seen ringworm on the wrist extend to the palm of the hand and induce a state of things like it, and eczema also, and disorders of sweat glands also; but I hold that a reddened, thickened, scaly appearance developed primarily in the centre of the palm of the hand, may for all practical purposes be regarded always as syphilitic.

Syphilitic Exostosis.—About two years ago I was consulted by an American gentleman for a peculiar complaint, for the relief of which he had consulted some twenty-one medical men in America, France, and England without benefit. He had indeed suffered many things of many physicians, and was none the better, but rather the worse. I found him in bed, pallid, nervous, irritable, and prostrated. He told me he could get no sleep whatever at night, as he had such agonizing pain in his head, his neck, his legs, and his sides. My attention was directed to his forehead, which presented two flattish oval bony projections a few lines high; to one of his clavicles, which was greatly enlarged, its sternal end being twice its usual size and projecting upwards most inconveniently; to his tibia, upon the front of which about its middle and above were seated two distinct nut-like hard prominences; and to his ribs, some of which presented similar enlargements. I regarded these outgrowths as exostoses for the moment, as others had before, and I found my patient had taken an enormous amount of iodide of potassium. On inquiring into the history of the case it turned out that these apparent exostoses came in the first instance as softish lumps, and it seemed to me that they had developed out of a periostitis. I then found that the patient had had syphilis some eight or nine years before badly, and had not been well since. I finally concluded that the whole thing was syphilitic, and decided to mercurialize the patient, who was taking forty and more grains of chloral, opiates, and other things at night. However, the case seemed to me so clear, and yet no one had before held my view of the case, that I asked Sir William Jenner to see it with me, and he agreed in my view. We gave bichloride of mercury with large doses of sarsaparilla. In a very little time the pains went, the swellings disappeared, the patient gained flesh, and he has since been over from America to see me, and reports himself never better in his life. The cure, I confess, astonished even me by its rapidity and completeness. This outline perhaps will do more to give an idea of a condition of bony formation that may sometimes occur late on in the history of a case of syphilis than any detailed or set description I could give. The fact that the disease arises as a periostitis is the diagnostic point.

DACTYLITIS SYPHILITICA.—This is a tertiary disease of the fingers of considerable clinical interest. The best account is that given by my friend Dr. R. W. Taylor, of New York.* It is a disease not of the superficial, but the deep parts—the bones and their fibrous coverings—of the fingers and toes. The disease is due to the formation of syphilitic granulation tissue (gummy deposit) in these parts. The patient in whom the disease occurs always affords a syphilitic history, and the lesion under notice follows the events of the secondary period, and, as far as has been observed, mostly occurs in close connexion with other signs of tertiary syphilis.

The gummatous material may be deposited mainly in "the subcutaneous connective tissue, as well as the fibrous structures of the articulations and the phalanges," or the morbid process may "begin in the periosteum and bones, and secondarily implicate the joints, and may or may not be accompanied by deposit in the subcutaneous connective tissue" (Taylor). But this division of the cases that have been observed into two classes is "quite arbitrary," yet it is clinically convenient.

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* See the American Journal of Syphilography and Dermatology, Jan. 1871, in a paper in which every possible reference to authorities is given. See also a case recorded by Dr. Wigglesworth in the same journal, for April, 1872.

The variety that begins superficially, to use Dr. Taylor's words, generally "consists in a copious gummy deposit, both in the connective tissue and the fibrous structures of the joints, with subsequently a much less copious deposit in the phalanges. It may be developed in a single finger or toe, or it may involve more than one of either of these members, and may even involve one or more of each at the same time. It usually attacks but one joint, and in all but one of the recorded cases—in which it occurred in the second—it has been the first phalangeal joint." The deposit is more marked on the dorsal than the palmar or plantar aspects of the hands and feet, and "at the metacarpal or metatarsal phalangeal articulations; it shades off abruptly into the integument of the hand or foot, forming" a ridge or "a ring." The disease is quite different from syphilitic paronychia, in which the matrix is inflamed and ulcerated. It develops itself very slowly, and runs a very chronic course. The lesion shows little tendency to disorganization or necrosis. The growth always feels hard and resistant, and is not lax or moveable. The integuments are of a livid red colour, and this persists for a considerable time until cure approaches. The ligaments are eroded by the deposit of gummatous material and its subsequent removal—hence they appear worm-eaten. The swelling may thus be confined to one phalanx, it may shade off into or wholly involve the second, or may uniformly enlarge the whole of the finger or the toe. "This variety differs from the second in the fact that the principal deposit is in the connective and fibrous tissues, whereas in the latter the principal seat of the morbid process is in some portion of the bone. The clinical facts which are now in our possession do not allow us to state decidedly that the lesion of the bone only progresses to a very moderate degree, as shown by a not very extensive enlargement of those structures in recorded cases," for the simple reason that anti-syphilitic treatment has been adopted at an early stage.

But repair takes place in some cases, in others there is much deformity induced, but this results chiefly from the implication of the joints in the disease, which are the seat of crepitation, in some cases due to the impaired nutrition of the cartilages, if not erosion. The final stage of the disease may leave the joint slightly, if at all, injured or distorted. The movements of the joints are much impeded during the period of greatest deposit. The accompanying figure (28) represents a toe affected in one of Dr. Taylor's cases.

The infiltration was so copious that even long-continued firm pressure failed to clearly reveal the condition of the bones, but the joint structures and the first and second phalanges were noticed to be considerably enlarged, and the first phalanx was thought to be more enlarged than the second. Pain was not present in the toe, neither was it produced when the integument was pinched, nor when the lateral surfaces of the joints were pressed, nor when their articular surfaces were firmly shoved together. The length of the toe was normal.

Fig. 28.

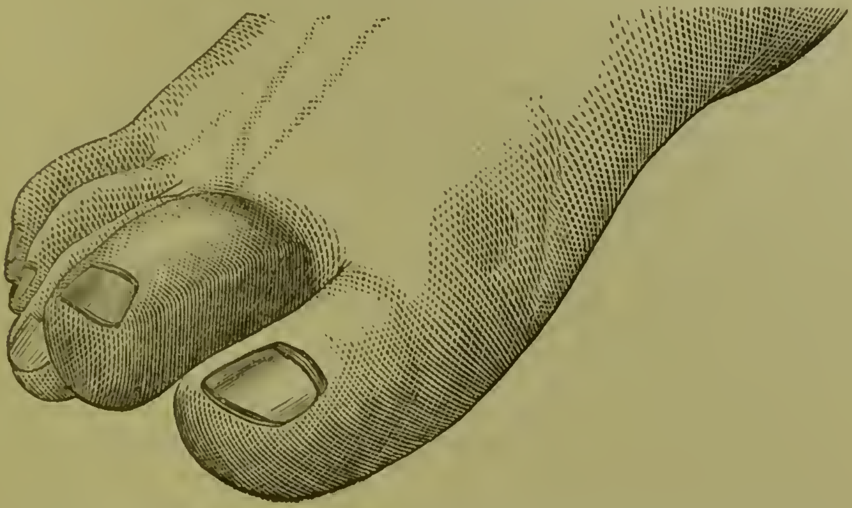
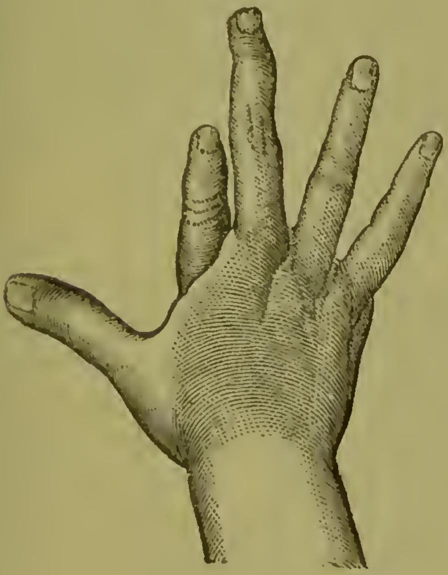


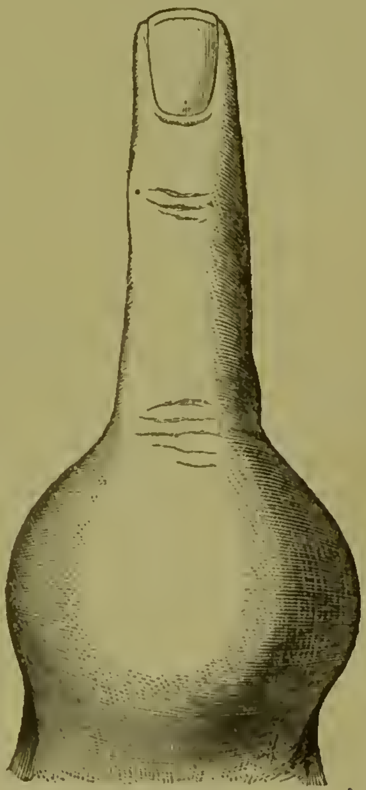
Fig. 29 shows the deformity finally produced in a hand.

Fig. 29.



(After Volkmann.)

Fig. 30.



One of Berg's cases.

The second clinical variety commences as a periostitis, or as an osteo-myelitis. Dr. Taylor says:—

> "The swelling of the fingers and toes in this variety is very considerable, so that n Berg's case the circumference of a finger at the first phalanx was nearly five nches. As the principal lesion is in the bone and joint-structures and only ex-

ceptionally under the integument, the enlargement is nearly limited to the phalanges which are involved. The recorded cases show us that any, or all of these phalanges may be attacked by this process; the process may be slow in development, or it may run an acute course. In the thumb of a patient of Volkmann's the first phalanx slowly enlarged, and thus remained a year, before the second was involved, whereas, in the same patient, other fingers swelled so acutely that it was necessary to make incisions into them. So we may conclude that the acute and chronic course may exist in the same patient.

"The integument becomes very much stretched by the pressure from within, and the surface-markings and articular furrows in it are effaced, and it can only with difficulty be pinched between the fingers, and it may be so very tense that it can scarcely be moved over the parts beneath. Its colour varies from a pink to a decided red, and when the lesion of the bone has been very acute, it may become very much tumefied and sensitive; but this condition is only temporary. In this variety, as in the first, there is no concomitant lesion of the nail, even when the last phalanx is involved. The gummy deposit does not, as a rule, exist under the skin in this variety, though in one of the fingers of Volkmann's patient, upon incision, it was found there in very small quantity."

The final result is the destruction and removal by interstitial absorption of the bone, the whole or part of the shaft attacked, the finger being left shortened and deformed. There is no suppuration. When the disease runs an acute course the swelling is not so hard as in the chronic disease.

Thus dactylitis occurs in connexion with other tertiary lesions, it has as its accompaniment the evidences of the syphilitic cachexia, it is a disease of mid and late life, but may also occur in the young.

Diagnosis.—Dactylitis might be confused with chronic rheumatic arthritis, paronychia, strumous disease, enchondroma, exostosis, and periostitis. The concomitants, and the history of the case, and the painless nature of the affection, would invariably save from error.

GENERAL REMARKS ON THE FOREGOING ERUPTIONS.

It will be evident to the reader, if he reflects upon what has been said as to the seat of the morbid processes in the foregoing description of the eruptions, that there are in syphilodermata the same type of changes as occur in the ordinary inflammatory diseases of the skin, except that in syphilis a new and special kind of tissue is formed. I am by no means sure that a pathological division of syphilitic eruptions is not the best and most convenient, commencing with hyperæmia of different parts in the first instance, and passing through the period and phases of infiltration, and subsequently resorption or degeneration of the infiltrated product. In fact, syphilodermata may be divided, for all practical purposes, into three groups—(*a*) those which are *hyperæmic*; (*b*) those that have deposit (or new tissue formation) as the main feature—*i.e., depositive*; and (*c*) *degenerative* lesions, the result of suppuration and ulceration of the syphilitic new tissue formed in the skin.

The first effect of the syphilitic poison upon the general system is to give rise to syphilitic fever, and, together with this, transitory hyperæmic lesions show themselves, as in roseola and erythema. Sufficient time having elapsed for the operation of the syphilitic poison upon the nutrition of the textures, modifications of their normal growth take place—that is, new tissue is formed—viz., granulation tissue or syphilitic tissue, which appears in the form of papules, tubercles, mucous tubercles, gummata, &c. Meanwhile the syphilitic poison, circulating through the glands, has inflamed them, hence the occurrence of syphilitic acne; and the follicles—hence syphilitic lichen. These diseases commence in hyperæmia of the follicle and sebaceous glands respectively, but the hyperæmia is not now transient, but is succeeded by infiltration of granulation tissue into and about their parietes. At the same time the nerve trunks may become irritated by the poisoned blood or deposit about them, and herpes and pemphigus occur as a consequence. The further stage of syphilis of the skin consists in the infiltration by the syphilitic granulation tissue of the deeper parts, and more extensively than at an earlier stage of the superficial parts, whilst the patient's general health becomes cachectic; and the syphilitic tissue softens up and suppurates or ulcerates—in fact, this latter stage is characterized by degenerative changes in the syphilitic deposit in different parts. I may chart out what I have just said as follows:—

1st period.[*]—Syphilitic fever with, in the skin, transient hyperæmia, giving rise to roseola, &c.

2nd period.—Essentially characterized by the formation of syphilitic tissue and the occurrence of hyperæmias, which are not transient, but are followed by infiltration, and include

- (*a*) Hyperæmia of, and infiltration about, the sebaceous glands—syphilitic acne.
- (*b*) Hyperæmia and deposit in the hair follicles—syphilitic lichen.
- (*c*) Ditto in the derma—papular and tubercular, squamous and pustular syphilis.
- (*d*) About the nerves—syphilitic herpes and pemphigus.

3rd period.—Characterized by changes—*ex. gr.*, ulceration, &c., in pre-existing syphilitic formations, which lead to syphilitic ulceration, exostosis, &c.

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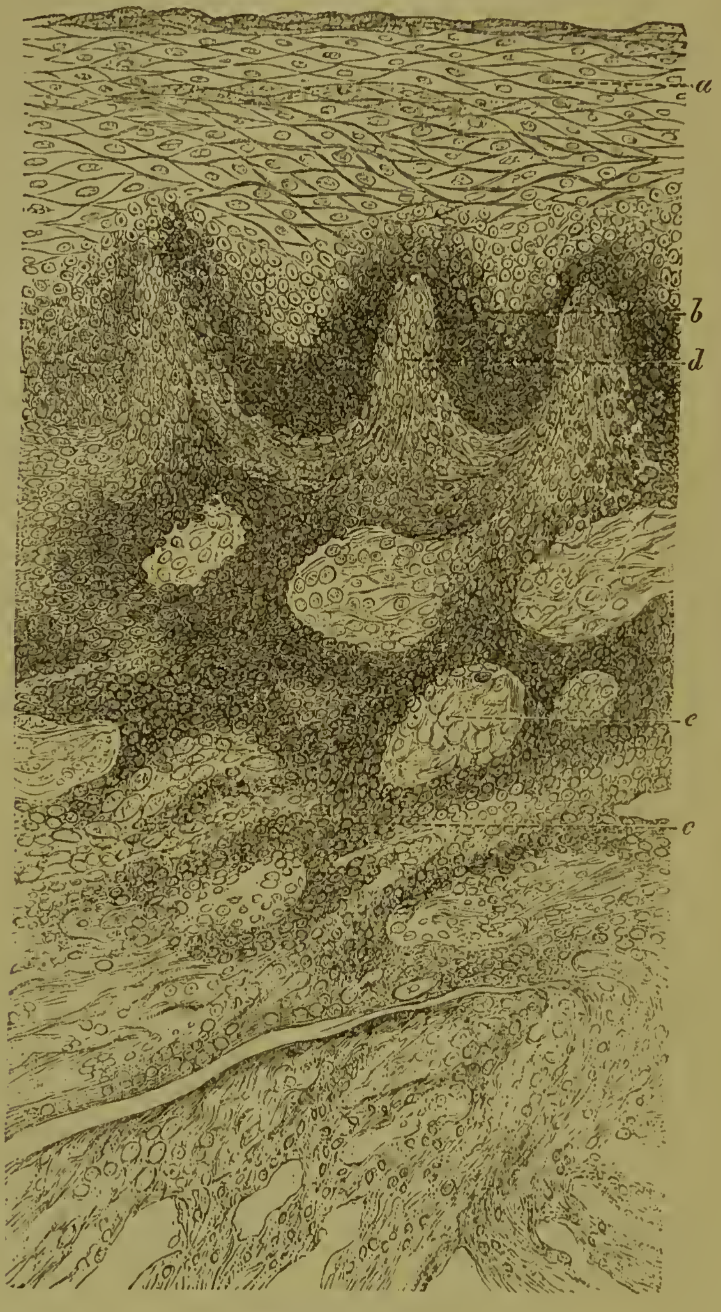
[*] Fournier, of the Lourcine Hospital, in Paris, has called attention to the frequent occurrence in secondary syphilis of the existence of insensibility to pain (analgesia) in the skin. This phenomenon is one of a variety of alterations of sensibility, Fournier affirms, which occur especially in women who are syphilized. The most common form of the disorder is localized analgesia, the patient being conscious of contact of heat and cold and the like. In other cases this analgesia is linked with more or less anæsthesia. But the latter does not exist without the former. In some instances the patient is analgesic and the sense of appreciating differences of temperature is lost. The commonest seats of the local analgesia are the lower parts of the legs, the feet, and the hands; the back of the hand is often alone affected; in fact it is in the latter situation that the analgesia must first be detected; and the analgesia is symmetrical, it is superficial (cutaneous truly so called) and most persistent in this locality. The occurrence of analgesia is coincident with the early development of secondary syphilis. The disturbance of sensation may last for weeks or months.—*Boston Medical and Surgical Journal*, April 14, 1870; paper by Dr. Wigglesworth.

The main thing in all cutaneous manifestations of syphilis is, after all, the production of new tissue of special kind, and it is to this and the changes it undergoes that I always direct the student's attention.

Fig. 31.

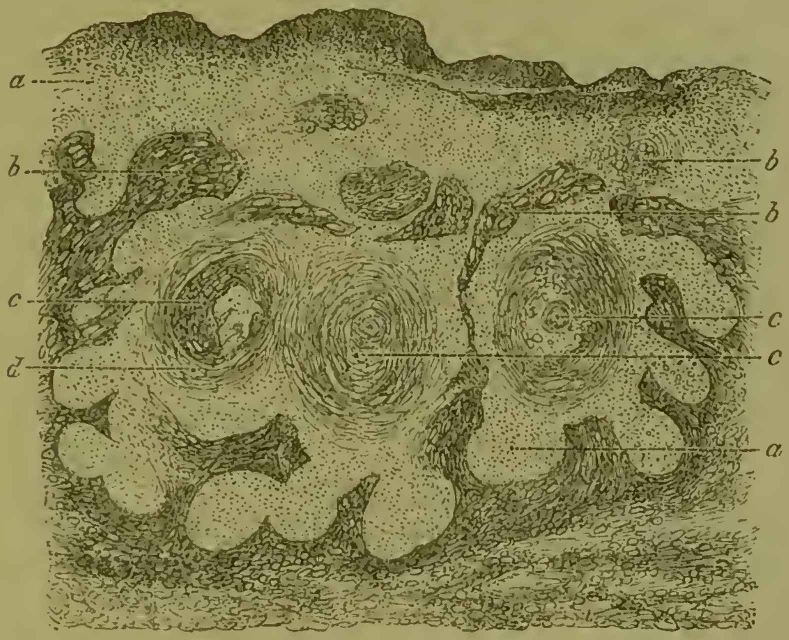


× 300. (After Auspitz.)

Vertical section through a syphilitic induration. *a.* Horny layer of epidermis. *b.* Rete Malpighii. *c.* Cutis. *d.* Papillæ filled with cells that appear to be continued into the cellular mass of the rete, making the outline of the papillæ indistinct. *e.* Cut connective-tissue bundles.

Morbid Anatomy and Pathology.—The main change found in the skin in syphilis is the formation of a new cell growth or granulation tissue. This new growth is made up of cells that structurally differ in no respect from those of lupus, and the description given of the cells of the new growth in lupus (see Elementary Lesions, p. 42) will apply equally well to the anatomical characters of those of syphilis. If the tissue of a hard induration be examined, the rete Malpighii will be found to be swollen by proliferation of its cells, which may presently undergo fatty degeneration, whilst the cutis is the seat of cell infiltration, pretty generally distributed along the vessels and in the meshes of the connective tissue (see fig. 31). There are additional changes induced by alteration in this deposit; for instance, on the removal of syphilitic indurations, there is the formation of scars, involving atrophy of the corium to a greater or less degree. The illustration (fig. 31) given by Dr. Auspitz may serve to portray the kind of infiltration which takes place in the skin in syphilodermata generally,* for the new cell growth is the same in them as in the chancrous syphilitic induration.

FIG. 32.



×100. (After Auspitz.)

Oblique section through the edge of a syphilitic ulcer of the scalp. *a.* Epidermis. *b.* Papillæ cut in all directions: many atrophied. *c.* Dilated hair bulbs with external sheath of the root. *d.* Surrounding follicular wall, having in its interior partly disintegrated cells.

In the papule and tubercle of syphilis of the skin, where the disease is marked, the cell growth is found to be very plentiful

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[*] Ueber die Zellen-infiltrationen der Lederhaut bei Lupus, Syphilis, und Scrofulosis. Von Dr. H. Auspitz (mit Tafel). Separat-abdruck aus den Med. Jahrbücher, 2 Band. 1864.

between the fat cells of the panniculus adiposus. The papillæ are sometimes greatly enlarged and elongated, and in the case of condylomata, which are essentially tubercles, they are much branched. Where the disease is severe, the meshes of the connective tissue are enlarged and greatly distended by collections of cells. When the syphilitic new formation undergoes resorption, and especially after ulceration takes place, there is atrophy of the corium produced, with destruction of hair follicles, glands, and papillæ, as in lupus, and as seen in fig. 32.

Auspitz remarks that, in the case of syphilitic ulcers, the same changes are found as in the lupus ulceration about the walls and the base of the ulcer. In the instance of pustular syphilis, the cell infiltration is accompanied by changes in the rete Malpighii similar to those observed in the pustule of small-pox—that is to say, loculi are formed in the rete by fibres formed from stretched-out cells, and enclosing pus cells. It will be readily understood that in proportion to the degree of cachexia or mal-nutrition, the normal textures will tend to soften up, to suppurate, or to ulcerate, as the case may be, in connexion with the invasion of these structures by the new growth.

Diagnosis of the Syphilodermata.—This has been sufficiently dealt with under the head of individual eruptions, and in the opening remarks. (See p. 280.)

Treatment.—I know of no disease in regard of which it is more important to remember that the treatment of the disease is one thing, the treatment of the patient another; and that the proper treatment required to relieve an individual of his disease must be a combination of those remedies which are calculated to combat the diseased processes themselves, and those which remedy conditions belonging to the individual himself, which tend to modify these morbid processes. Syphilis in a person of nervous temperament, on the one hand, and scrofulous habit on the other, is not quite the same thing: nor in the private patient on the one, and the half-starved hospital out-patient on the other. It is necessary, in fact, to treat the disease and to treat the patient also at the same time. In dealing with this matter I of course take up the question of treatment in relation to secondary and tertiary disease only.

The Treatment of the Patient.—The syphilitic fever is a great depressant; it unfits the individual in whom it occurs for active work, and, in my opinion, should lead the physician to prescribe perfect quiet and rest for some days, to be followed by the prescription of change of air for a week or ten days if possible. The patient should adopt a cool regimen, avoid wine and beer at first, be careful not to catch cold, and should live plainly. In this way the physician places the patient in the most favourable condition to recover speedily and in the best possible manner from the attack. If the patient be one of the middle or upper classes, it may be all the more necessary to "cut off the supplies;" but if he be a hospital patient, ill-fed and ill-clad, it is all the more necessary to enjoin rest, and to commence from the outset a tonic plan of treatment, and as far as possible to augment the quantum and improve the quality of the diet.

As the disease advances these several points acquire greater importance. The luxurious life, the over-eating and over-drinking of many of the rich, are as antagonistic to the favourable progress of syphilis as are the want and uncleanliness of not a few of the lower orders. In my experience the influence of alcoholics on the course and character of syphilitic lesions is very great indeed. Free indulgence in alcoholics implies, as the rule, a lack of good solid food, and not seldom debauchery in the indulger; and under these circumstances cachexia is more speedily developed. Another cause which I think considerably modifies the aspect of syphilis of the skin is a scrofulous disposition. The tubercles of syphilis tend to suppurate and to ulcerate, it seems to me, very readily in such subjects.

Bad living, mal-hygiene, indulgence in alcoholics, and the strumous habit of body, are the chief peculiarities in the individual that demand special treatment in connexion with syphilodermata. The means for remedying these mal-influences are self-evident, the strumous tendency calling for good food, iron, quinine, and cod-liver oil at an early stage of the disease.

The Treatment of the Disease itself.—Dermatologists possess no remedy which they can introduce into the system to neutralize the syphilitic poison. They can only keep in check, and quicken the removal of, the results of its operation upon the nutrition—the formation of the new cell growth. But more than this—it is possible to thwart, by the judicious exhibition of a tonic treatment, dietetic and medicinal, the occurrence of ulcerative changes in the neoplasm.

The remedy for all syphilodermata is of course *mercury*, except in those cases in which the drug may, in consequence of the existence of cachexia, still further depress. In these cases, and those of tertiary syphilis, empiricism has taught us that the appropriate remedy is *iodide of potassium.*

Different explanations are given of the action of mercury. The drug increases the action of the natural emunctories—notwithstanding Dr. Hughes Bennett and his experiments on *healthy* dogs—and it in part so far does good. But it would seem to act by causing absorption of morbid tissue—such as inflammatory products, syphilitic tissue—more speedily than that which is normal, for it must be remembered that mercury acts very salutarily in cases of chronic inflammatory thickening, as in chronic eczema, psoriasis, sycosis. Mercury, when given freely and persistently, causes softening and absorption of normal tissue—ex., the gums, and it is quite conceivable that the kind of action exhibited towards the normal tissues may be much more active quoad *diseased* tissues, because the latter must possess less of that power to resist morbid changes under the influence of chemical and other agencies acting upon them than do healthy tissues. Now naturally, in persons broken down in health, in whom there is much suppuration or tendency to "unhealthy" ulceration, the normal resistant power of the tissues is lessened in amount, the whole tissues exhibit a marked disposition to soften up and degenerate, and consequently the action of mercurials may be bad instead of good. Under such circumstances as these, if mercury be given, it must be given cautiously, and be combined with potent tonics; but I invariably combine quinine, and frequently iron, with the mercurial which I give to patients, and I think with decided benefit. But in so-called tertiary syphilis, the deposit may be slight, whilst the unhealthy behaviour of the surrounding tissue explains the rapid extension of ulceration. Mercury is of course not called for in this case. Hence theoretically the drug is of use where the formation of new tissue is marked, and does not show any tendency to freely suppurate or ulcerate, and the patient is not cachectic. Mercury is to be avoided where the deposit is slight, or rapidly degenerates, or in persons markedly cachectic. I cannot explain the action of iodide of potassium except that it acts on the glandular system, increasing resorption of infiltrations, and so does good in cachexia, whilst mercury influences directly the new-formed tissue. There are cases which occupy a medium position, in regard of which it is not possible to say whether mercury or iodide of potassium will act the better of the twain. There are some cases especially of tertiary or deeply-seated disease in patients who have been under the influence of iodide of potassium for a long time, and who are not cachectic or debilitated to any great degree, that are at once benefited, and occasionally marvellously so, by a mercurial course. I have seen many such cases. But in some instances of syphilodermata the combined use of mercury and iodide of potassium is of much value; in fact, in well marked, wide-spread tubercular syphilis, this is the treatment I adopt. Salivation should never be produced. It is unnecessary.

Now as to the mode of administering mercury and iodide of potassium. I have for years discarded the bichloride, blue pill, and all other preparations of mercury, and I now use the bicyanide exclusively. I give it in pill, beginning with gr. $\frac{1}{20}$, with extract of gentian, quinine, or opium, as the case may be, twice a day; whilst iodide of potassium, in five-grain dose, at first twice and soon thrice a day, with spirits of ammonia, is given internally; and each dose about three hours after each pill. In this way I get the full effect of the iodide of mercury without upsetting the stomach by introducing the compound into it. The mercurial may be continued until the disease goes—say in a month or six weeks, or until the gums show signs of becoming spongy. Salivation should not be induced. If the disease be extensive, the calomel vapour-bath twice a week may be administered. This is my usual treatment, and I am quite satisfied with it, especially with the action of the bicyanide, which is a more soluble compound than the bichloride, and has none of the irritating qualities of the iodides. I never produce salivation, nor other serious "mercurial" sequences; and the bicyanide, given alone in the slighter forms, acts most effectually. The iodide of potassium is given with it at once, when the disease is papular, tubercular, or pustular, and general over the body.

If the patient be much debilitated the action of the mercurial is to be watched, if anæmic iron may be combined in full doses with the iodide of potash. It may be continued until the disease disappears or is disappearing, and then iodide of potassium substituted for it. If the gums get spongy the drug must not be taken, or only in diminished doses.

Inunction is another mode of exhibiting mercury, but it is only of use in infantile syphilis, except where disease is rapidly spreading, and it is desirable to make a very rapid impression upon it.

Speaking generally, I may say, by way of summary, in the papular, tubercular, squamous, and pustular syphilides mercurial treatment is called for. In the ulcerating forms, if the patient be well nourished and pretty strong, there is no objection to a mercurial course; but where cachexia is marked, and the patient's condition is one of evident debility, iodide of potassium with cod-liver oil, or iodide of iron and good food, constitute the best treatment.

In cachectic subjects who are debilitated, restless, and irritable, opium given internally is of much service. In reference to iodide of potassium it must be borne in mind that its use is beneficial in direct proportion to the duration of the disease; hence when nodes, tubercles, caries, and secondary ulcers are present, when mercury has been fully used, or seems to fail.

The dose should be gradually increased by three or four grains every few days, until in the case of old-standing and ulcerative syphilis it reaches thirty or forty grains.

In most cases the exhibition of decoction of various woods is advisable. The compound decoctions of sarza and guaiacum are the best; they keep the skin and bowels freely acting, and thus very materially help the elimination of the poison.

When a patient is under the influence of mercury, he should avoid stimulants, cold, and other sources of irritation and catarrh.

The administration of mercury should always be followed up with a course of mineral acids and bitters, or iron and quinine, or other suitable combination.

Mercurial fumigation, which acts both locally and generally, is in great favour with some practitioners. It involves a great deal of trouble and inconvenience, and the process is often long over its work. I think my cases do quite as well if not better without it, and I do not largely employ the calomel vapour-bath. In giving a mercurial bath, the patient is seated upon a chair and covered with flannel, and outside this by an oil-silk quasi-coat or bag; beneath the chair is placed a copper-bath, containing a pint or somewhat less of water; upon this is placed a tinned iron plate, which holds the mercury to be sublimed; beneath the bath is placed a spirit-lamp; the patient, after the latter is lighted, is "exposed to the influence of three agents—heated air, common steam, and the vapour of mercury; in about five minutes perspiration comes on, and the patient should be subjected to the influence of the bath for some ten or twenty minutes, when the lamp should be removed, the patient allowed to cool gradually, and made to take," as Mr. Parker further observes, "a warm drink of decoction of sarza or guaiacum."

If the preparation employed be the bisulphuret of mercury, about one or two drachms should be used; if calomel, from ten to twenty grains; if the iodide, ten to twenty grains; the oxides and the bisulphuret are the mildest, the iodides the strongest fumigants. The bath may be used once, twice a week, or even more, according to circumstances.

The Zittmann Treatment.—Continental dermatologists advocate a plan, which Wilson briefly defines as "a triple compound of starving, purging, and sweating," and which he mentions with commendation; it is the so-called Zittmann treatment, but is one which compels the patient to give up his usual employment, to take to bed for a fortnight or so, and on this account is almost inapplicable in a general way. I have used it with benefit in old-standing disease, in which iodide of potassium did not act well. The patient who has syphilitic disease wants to get rid of it without entering upon any plan of medicine which would disclose his secret, and take him away from his work; most men could not afford the time: however, the plan is as follows:—First day, a purge (calomel and jalap), and three meals of broth; up to the fifth or sixth day four pints of the Zittmann decoction are taken daily—of these four pints two are made of the strong and two of the weak decoction (*vide* Formulary, No. 166)—with each day two ounces of meat and two of bread; on the sixth day an active purge, with broth as before; the seventh till tenth repeat the drinks, and meat and bread; this continues till the fourteenth day or so, and then the patient is kept on low diet, allowed to get up, but still continues to take a small quantity of the decoction. If convalescence is tardy or insufficient, the same treatment must be recommenced.

It has been a matter of much dispute whether infantile syphilis should be treated upon similar principles to those above described. For my own part, I should be exceedingly sorry to be an infant affected by specific disease and not treated by the drug mercury, in addition to chlorate of potash, and syrup of iodide of iron.

The best plan is to rub a little mercurial ointment into the sole of one foot at night, and where the nurse or mother is tainted, to give the iodide to her, and therefore to the child through her milk. The mercurial requires to be used only a few times, and at each rubbing a piece of ointment about the size of half a pea suffices.

Treatment of syphilis by *hypodermic injection* of mercury has been advised. This plan was first adopted by Dr. Lewin, of Berlin, but it is of very inconvenient application. Dr. Taylor, of New York, as the result of his trials, says that an injection of an eighth of a grain of bichloride of mercury every second day for two or three months is of value in all the secondary periods of syphilis, in syphilitic neuroses and cachexia, and early tertiary disease, but not in bone disease or mucous-membrane trouble. But relapses are as frequent with the hypodermic as with other plans of treatment, and there are local effects, such as pain, induration of the connective tissue, and abscesses. Dr. Wigglesworth has also written ably on this subject.* The best seats for injection are those where the skin is most moveable and most readily thrown into folds—ex., the sides of the chest, the hypochondria about the back, and the nates near the crests of the iliac bones. The parts near lymphatic glands are to be avoided. Dr. Lewin suggests the use of a solution of 4 grains to the ounce, the dose being from 8 ($\frac{1}{15}$) to 24 (gr. $\frac{1}{5}$) drops.

"The best syringe for injecting is made of hard indiarubber, as this is least readily attacked by the corrosive drug. The measurement of its contents should be made in grains rather than in drops. The exact dose administered should always be known. The bore of the syringe should be everywhere the same, and the piston exactly fill it. The canula should have a point like a pen, for if lance-shaped the pain of extraction is greater than that of insertion. This point must be as small and the canula as smooth as possible. Careful cleansing of the canula and occasional sharpening of its point are necessary to preserve them from the action of the sublimate. With care one canula will suffice for one hundred injections. As a rule, one injection per diem is sufficient, though the administration of two seems sometimes to hasten the cure. A fold of the skin is to be raised between the thumb and forefinger of the left hand; the canula should be inserted quickly and through the cutis into the subcutaneous cellular tissue, and then pushed well in. During the injection the point of entrance of the canula should be covered with the left forefinger, and the canula itself gradually withdrawn, so that its point at completion of the injection shall be near the place of its insertion into the skin. On the removal of the canula, the forefinger, before quitting the skin, should press and rub the wound slightly to one side, as this prevents loss of the injection or of any blood. The wound may then be covered with a bit of plaster. With regard to diet, clothing, bathing, &c., this mode of treatment requires no departure from usual habits."* The method is not increasing in favour, however.

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* Boston Medical and Surgical Journal, Aug. 26 and Sept. 2, 1869.

The Local Treatment of Syphilodermata.—The erythematous forms require no special application. I often use an oxide of zinc lotion, coloured with calamine. If they be obstinate and leave behind any papules, a white precipitate ointment may be used; the squamous and papular eruptions are relieved by calomel ointment, bichloride lotion, and nitric oxide of mercury ointments. The tubercular and ulcerating forms of disease are those which require special local medication. In the tubercular form mercurial ointments—ex., weak nitrate or nitric oxide—are those most especially useful: acid nitrate of mercury may be used cautiously to destroy obstinate indurations. Syphilitic ulcers may be dressed, if painful, with a solution of watery extract of opium, or be dusted over with calomel, or be stimulated with the nitric oxide of mercury ointment, dilute nitric acid and borax lotions, or treated by the local application of mercurial vapour. If they are very foul or dirty-looking I prefer dressing them with iodide of starch to any other treatment. After a while a clean sore is produced, which may be dressed with a weak mercurial application or an astringent wash. In the appended Formulary several remedies will be found in reference to the general and local treatment of syphiloderma. See numbers 17, 21, 23, 24, 49, 94-5-6-7, 98, 99, 126, 132, 135, 141 *et seq.*, 166, 179, &c.

LEPROSY, OR ELEPHANTIASIS GRÆCORUM.

Under this head I include the true leprosy, or Elephantiasis Græcorum, known in India as Răkta-pĭti; in Arabic as Jazam or Juzam. The disease of the leg known as elephant leg, or elephantiasis Arabum, and now called bucnemia tropica, or pachydermia, has no true relation to leprosy.

The best information we possess with regard to the disease is contained in the Leprosy Report (1866) of the College of Physicians. But there are also a host of scattered papers, in various publications, of great interest.†

Its geographical distribution is most extensive: the chief seats of leprosy in recent times continue to be the same regions of

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* See Wiener Medizinische Presse, Nos. 17, 20, 24, 28; 1868.

† See (1) the Half-yearly Customs Reports issued by the Inspector-General at Peking. (2) A series of papers in the Indian Medical Gazette, 1866, by Mr. Macnamara of Calcutta, being an analysis of reports of 107 medical officers in the East Indies, in reply to interrogations officially submitted to them. (3) Essai sur l'elephantiasis des Grecs, et sur l'elephantiasis des Arabes, par Dr. Brassac, in the Archiv. de Méd. Navale, 1866 and 1864, &c. &c. (4) The work of Drs. Danielssen and Böck. (5) Indian Medical Journal, Jan. 1866, *et seq.* (6) Scheme for Obtaining a Better Knowledge of Endemic Skin Diseases of India, prepared for the India Office by Dr. Tilbury Fox and Dr. Farquhar, 1872. (7) Report on the Prevalence and Characters of Leprosy in the Bombay Presidency, from Bombay Med. and Phys. Soc. Trans., vol. xi., 1871, by Dr. H. Vandyke Carter; and a paper in vol. viii., 1862, by the same gentleman.

Africa and Asia where it was originally seen, and where it is known to have been most common in remote ages. It prevails in Egypt and on the shores of the Mediterranean and Red Sea; in Abyssinia, the north coasts of Africa, in Algeria, and at Morocco and Senegambia; at the Cape, Madagascar, in the Mauritius, and the Isle of Bourbon; in the Asiatic continent; in the southern parts of Syria, about Beyrout, at Jaffa, at Nablus; in Arabia, and parts of Persia, Bokhara, Cashmere; in India, along the sea-coasts, in all the Presidencies; in Ceylon (its southern parts); in Java, Sumatra, and other islands of the Indian Ocean; in China; Kamschatka; Australia (Ballarat); the islands of the Ægean, both Turkish and Greek; Crete, and Cephalonia, and Malta; Greece; south-eastern provinces of European Russia, from the Crimea to the Sea of Azoff, and by the Caucasus away to Astrachan; and in the Baltic provinces, Esthonia, Finland, and Courland; in Sweden, Norway, Iceland, the coasts of North Italy and south-east of France; the shores of the Mediterranean; on the French coast, Provence, Languedoc, and Roussillon; the delta of the Rhone, especially about Martignes and Vitrolles, and near Toulon and Marseilles; in Spain more than any other European country, especially Granada and Catalonia; in Portugal about the provinces of Lower Beira and the Algarve. It is endemic at Madeira, and prevails in Mexico, Brazil, and West India Islands, New Granada, Venezuela, and Ecuador; in Brazil it is common, and La Plata States; in the West Indies, Cuba, Jamaica, Barbadoes, Guadaloupe, and St. Bartholomew chiefly; and in North America, at New Brunswick.

Its characteristic cutaneous feature is the development of a neoplasma resembling the granulation tissue of lupus or syphilis, which invades the fibrous structures and the nerves. The production of this tissue is the result of some alteration of the general nutrition. There are two chief forms of leprosy—the tubercular and the non-tubercular, or as it is sometimes called the anæsthetic variety. There is no line of demarcation between the two. They run the one into the other, and their respective characters are often intermixed.

In both varieties after a period of general ill-health or debility, not well marked in some cases, erythematous patches occur about the skin; these are succeeded by more or less deposit, and presently anæsthesia develops. So that the three chief features are, as regards the surface, *discoloration, deposit, anæsthesia.* In the tubercular variety the deposit is the marked feature; in the anæsthetic variety the anæsthesia is the more marked—that is to say, the disease attacks in the latter the nerves by preference, and in it the results of nerve lesion are particularly perceptible.

With these introductory remarks I will proceed to describe the two varieties of leprosy in detail.

The tubercular form (see figs. 33 and 34) commences with malaise —an indefinite feeling of something wrong—rheumatic pains—a falling asleep of a limb frequently (generally referred, says Dr. Bowerbank, to some chill or sudden change of temperature), or with pricking sensations about the hands and feet. Sometimes these do not occur. In several cases I have seen (and which have been more than once mistaken in the early stage for syphilis) the patients have given some such history as this:—That they have lived a long time in parts of India or elsewhere where the disease is endemic; that they have had repeated attacks of "ague and fever," which have pulled them down very much; and that some years afterwards brownish coppery stains began to appear in different parts of the body, and upon these small brownish tubercles formed, first of all about the nose and eyebrows, or ears or neck. The next thing noticed was a loss of sensibility about the little finger and corresponding side of the palm of the hand, with wasting of the muscles between the forefinger and thumb. At all events, very soon there is a dull red discoloration in patches: then the face begins to flush and swell, and looks overheated; then the limbs and trunk brown, and little tubercular formations make their appearance, first of all about the face, especially the ears and on the discoloured patches. From this moment the disease steadily progresses. The tubercles vary in size from that of a pea to that of a walnut; they are soft, smooth, shining, of a dusky-red colour at first, becoming presently brownish-yellow, or bronzed. In the early stage, the sensibility of the part may be increased, in consequence of the pressure exerted by the blastematous effusion upon the nerves; but after a while this morbid sensibility, if it existed, becomes altered in character, and, from the greater degree of morbid change, diminished sensation sets in, and increases until it becomes decided anæsthesia. On stripping a patient after the disease has lasted some time, one notices deep brown staining in patches varying in size from a shilling to the area of the hand over the front and back of the trunk, the arms, all round the neck (and of course all over the face) separated, save on the face, by healthy skin. Upon these patches are the tubercles in little parcels, or collected into one or more flattened elevated masses studded over the surface.

The tubercles are most marked in situations where there is much lax cellular tissue; therefore about the face, nose, lips, eyes, mouth, and ear. The disease may be more or less partial. The sebaceous glands now take on a hyper-action; hence the skin is oily and shining. The increase in the development of the tubercles produces terrible deformity; the surface feels thickened, knotty, or uneven; the face is altered completely; the edge of the mouth and lips, the eyebrows, the alæ of the nose, the eyelids, are all distorted and thickened, the whole integument being dirty and sallow-like, and the various aspects presented by the patient have been described by the terms *leonine*, satyr-like, &c. The sebaceous glands become enlarged. When the lower limbs are affected, the disease is generally most marked about the lower part of the thigh and ankle. Coincidently with these changes anæsthetic points appear in the centres of the oldest patches. In the cases I have seen, the parts supplied by the ulnar nerve were insensible, and this has only been discovered accidentally by burning or scalding, which has not been felt. The ulnar nerve can be felt enlarged and cordy above the elbow; a good deal of pain of a neuralgic character occasionally accompanies the anæsthesia. The muscles of the hand waste, the fingers cannot be opposed, nor the hand grasp properly or pick up small things, in consequence, even in an early stage of disease. Not only the cutaneous but the mucous membranes participate in the same change. The mouth, the palate, the fauces, the trachea, the nose, the eye, are all affected by deposition of material in their mucous surfaces to a greater or lesser extent. The internal glands—*e.g.*, the liver—indeed, all the internal organs, with the exception of the pancreas, are finally affected; in fact, the system is generally implicated. The patient's general condition all this while has not been serious He is morose, low-spirited, dull, and careless; but now his troubles are commencing in earnest. His voice is altered or has been altered some time, being thick and husky; he snuffles from the thickened state of the nasal mucous membrane; his sense of smell, of taste, &c., are affected, and the time has come for ulcerative action to set in in earnest; the tumours soften, ulcerate, and pour out an unhealthy, offensive secretion, which crusts over the sore from where it comes; the attempt at healing often fails. The eye is destroyed, the mucous surfaces of the internal parts ulcerate—*e.g.*, the nose and its bones are destroyed. Diarrhœa from intestinal ulceration is often a complication: the bones become carious, hectic sets in, and the patient dies. Ulceration is not so common in India as in Europe. The duration of tubercular elephantiasis, according to Drs. Danielssen and Böck, is nine and a half years. But twenty or even more years is common in other climates.

The following illustrations (figs. 33 and 34) portray the main characters of the tubercular leprosy. The one is a full-length portrait of an Eastern leper, with the tubercular deposits ulcerating; the other shows the tubercular thickening of the structures of the face.

The anæsthetic variety differs somewhat from the tubercular in external aspect. Whereas in the tubercular form the deposit shows itself in a very marked manner, and implicating the nerves only as it were secondarily, or at any rate not markedly at first comparatively speaking, in the anæsthetic variety the disease affects primarily the nervous trunks, and very speedily leads to marked anæsthesia, and subsequent destructive changes; and it may be readily conceived that the disease in its commencement shows itself more or less insidiously by symptoms indicative of some local nerve disorder. Not a little deposit may take place in the fibrous textures without disturbing the patient's health or com-

Fig. 33.

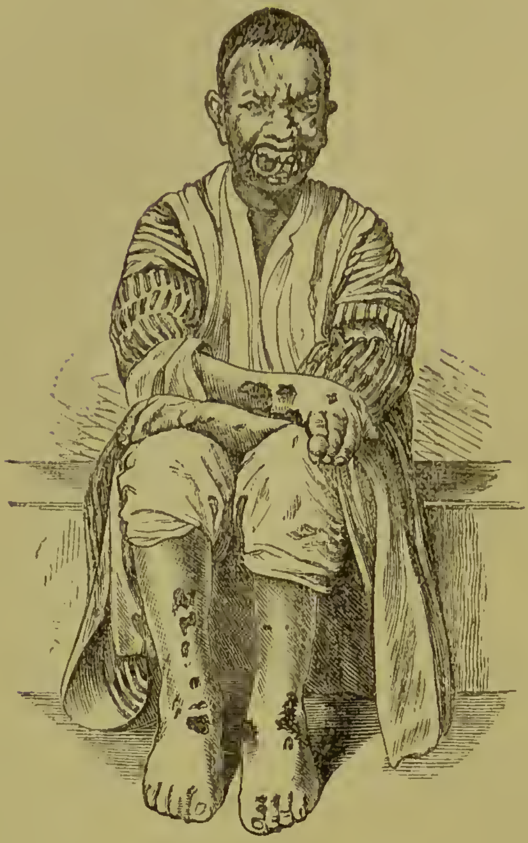
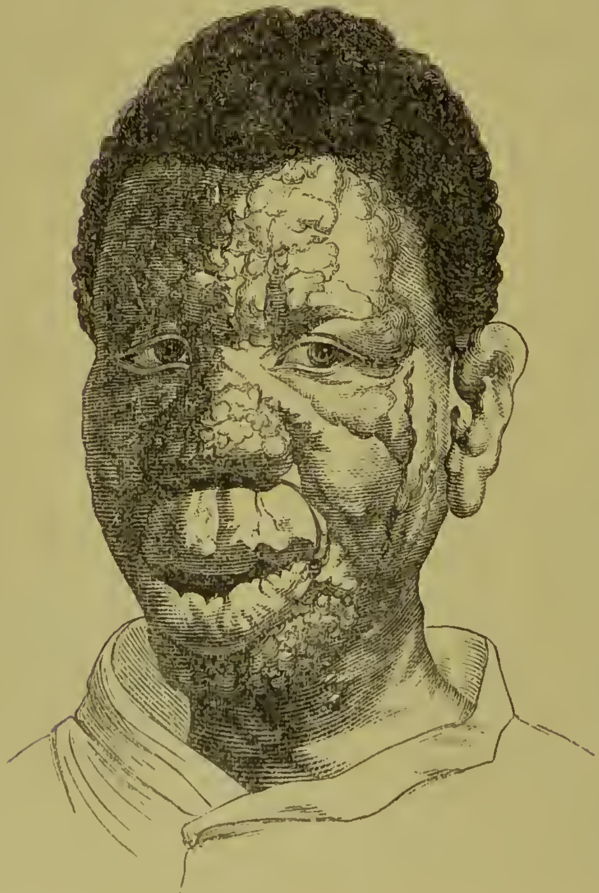


Fig. 34.



fort, but a little nerve disorder will soon show itself by anæsthesia and localized changes in the muscles. I think, perhaps, the fact of these local muscular affections occurring early in anæsthetic leprosy is not sufficiently recognised. This comes out in strong prominence in the accounts of leprosy recently published by the medical officers of ports in China, in the half-yearly reports of the *Customs Gazette*, issued from Peking. The general symptoms of the *anæsthetic* variety are the same as in the tubercular form. Locally at the outset there may be many subjective sensations of heat, shooting, burning, pricking sensations about the hands or feet, with more or less weakness, followed by tenderness, pain, and swelling along the course of the chief cutaneous nerves—*e.g.*, the ulnar, the median, the saphenous, &c., ending in numbness and insensibility to irritants, and wasting of muscles. The integuments get parched, dry, shrivelled, perhaps covered by a clammy sweat, and desquamate. Subsequently to this or coincidently, an eruption makes its appearance: it consists not only of erythematous patches, but especially of bullæ, which are of large size, occurring on parts previously anæsthetie—and as the nerve trunks are specially diseased, it is easy to understand why bullæ occur—these break, and their place is supplied by superficial ulcerations, which, after scabbing, leave behind white, hard, hairless, and glandless patches of disease. Dr. Vandyke Carter has specially studied this eruption, and I therefore append his description, in which I agree, thus :—"Patches or spots of a circular or annular form, three-quarters to three inches or more in diameter; edges raised, of a pinkish hue; free from scales, slightly cracked or wrinkled; centre depressed, pale, dry, glistening, having a tendency to spread and join so as to cover larger spaces." The central part of these patches is always anæsthetic, completely in cases of some duration, and feels hard to the touch. The patches may vary much by the presence of scales or slight desquamation, or slight ichorous exudation; the hairs of the part are atrophied, and it is said not whitened (Carter); they are subsequently lost. The glands also suffer in like manner. This typical form of eruption is the *baras* of the Arabs, the *leuce* of the Greeks. The result of careful inquiry seems to show that these patches are the result of changes in the nervous supply, that they run the one into the other, and vary in aspect from simple white atrophied circles to large "isolated but blended patches," with or without red vascular margins, passing through the stages in which the centre is first red, then brown or pale, and surrounded by a distinct pink border of vessels. The centre of every patch gradually becomes more and more anæsthetic. The chief seats are the back of the hip, the front of the shoulder, about the elbows, and on the forepart of the knee, over the temples, cheeks, trunks, and limbs. The eruption is symmetrical, and usually precedes the anæsthetic form. It existed alone in 14 of 186 cases (Carter), and in 48 of 186 cases of anæsthetic leprosy. In a boy recently under my care from Bermuda the disease consists solely of these quasi-psoriatic brownish patches, with a slight scaly ridge bounding the areas, and with anæsthetic centres.

Coincidently with the changes above described, the body generally wastes, especially its muscular system: hence the fingers become distorted, and in a peculiar manner: the first phalanx is bent backwards by the extensor; the others are flexed; not only does this happen in the hand, but the feet and other joints also are distorted and rendered prominent. The bullæ may give rise to deep, ragged, foul-edged ulceration, the base of which may be sensitive, proving the superficial character of the disease. The face is now much disfigured; it looks haggard, shrivelled; the skin is what is termed "mummified," or lax and loose. The mucous surfaces are exposed, in consequence of the "sclerotic" or hardened and contracted state of skin. The deeper parts now become affected; a joint is seized with acute pain, a sinus forms, a piece of bone is discharged, and the sore heals. Dr. Carter thinks this is an unusual mode (by necrosis); he believes that the deep parts are removed by "interstitial absorption," without pain or reactionary activity of any kind: the terminal phalanges are the first bones to suffer, and the disease, by steady progression, removes bone after bone. The mucous surfaces become involved; they are infiltrated with "blastema," but not to the same extent as in the tubercular form: hence there is not so much diarrhœa or suppuration as in the latter disease; the patients live, on an average, about as long again—eighteen to twenty years. The ulcers of the surface are supposed to be due to irritants acting from without upon devitalized (anæsthetic) parts: hence they are seen in those accustomed to hard manual labour. In the latter stages, the general health suffers very materially, but not to the same degree as in the other form of leprosy. The patient dies worn-out by exhaustion, bodily and mental, or is cut off by some intercurrent disease.

In certain cases leprosy partakes of the characters of both varieties, which only means that there are transitional stages between them. The *mixed form* of disease occurs in India in about 15 per cent. It generally commences with eruption, which is usually of the white (the *baras*) variety: it also begins in one-third of the cases under twenty and is rare after forty. The face exhibits the tubercles; two-thirds of the subjects attacked are males; and it is a fatal form, hereditary transmission being strongly marked. (Carter.)

UNDEVELOPED FORMS OF LEPROSY.

There are what I may venture to term abortive or undeveloped cases of leprosy, and I think without doubt, there are many anomalous cases of localized anæsthesia and muscular atrophy of limb, finger, and hand, especially when occurring in districts where leprosy is met with, which time will show to be instances of aborted leprosy. A few cases of the kind have recently been brought before the Clinical Society of London, by Dr. Buzzard,* Dr. Anstie,† and others. Dr. Anstie's case I remember well, for he very kindly asked me to see the case in consultation with him.

The transitional stages between mere impairment of sensibility in a part and real tubercular leprosy—taking as the intermediate stage anæsthetic leprosy with distinct eruption resembling psoriasis—are very well illustrated in a clinical Report on Leprosy, at Hankow, by Dr. George Shearer.‡ He remarks of his cases, that "sometimes anæsthesia pure and simple has been observed to exist for a period of five years, but there is no case amongst them where the anæsthesia having lasted for a period of ten years, was not accompanied by wasting, paralysis, and ulceration. These, in fact, constitute the connecting link with cases of true leprosy." He details some seventy-four cases of leprosy of different degrees and phases. The same facts come out in a Report on Leprosy by, I think, Dr. Manson, of Amoy, in a very striking way; but at the moment I cannot lay my hand on the references. The paper contained an excellent clinical account of leprosy, and it will be found in the *Customs Gazette*. There are several diseases bearing local names that are in reality leprosy.*

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* See Clin. Societies' Reports, vol. iii. † Clin. Soc. Trans., vol. iv.

‡ Customs Gazette, No. x., April—June, 1871; Shanghai, 1872.

I have met with one or two cases in which the leprous taint seems to show itself by a modified eruption which runs an indolent course without any anæsthesia except in the patches, without actual deposit as in the tubercular form, and without any great impairment of the general health for a long time. For example, I had a case recently under my care in a lad from Demerara, who had large brownish patches on the face (both sides), and the arms, and extensive tracts of disease extending from the middle of the thigh to near the ankle, the boundary of the patches being slightly raised, dull brown, somewhat scaly, the general area dry, shrivelled-looking, dullish white, and feeling somewhat thinned: the sensibility being blunted over the whole of the diseased patches. The follicles of the skin appeared as if congested, and as though they had been the seat of deposit, which had been almost entirely absorbed and had left behind a certain amount of atrophy. It was only when a pin was thrust deeply into the skin that the boy felt pain. There were one or two marked anæsthetic spots. There were little masses of deposit in the pharynx. The disease commenced by brown stainings, and appeared in the face nine months before. The boy had "fever and ague" in Demerara.

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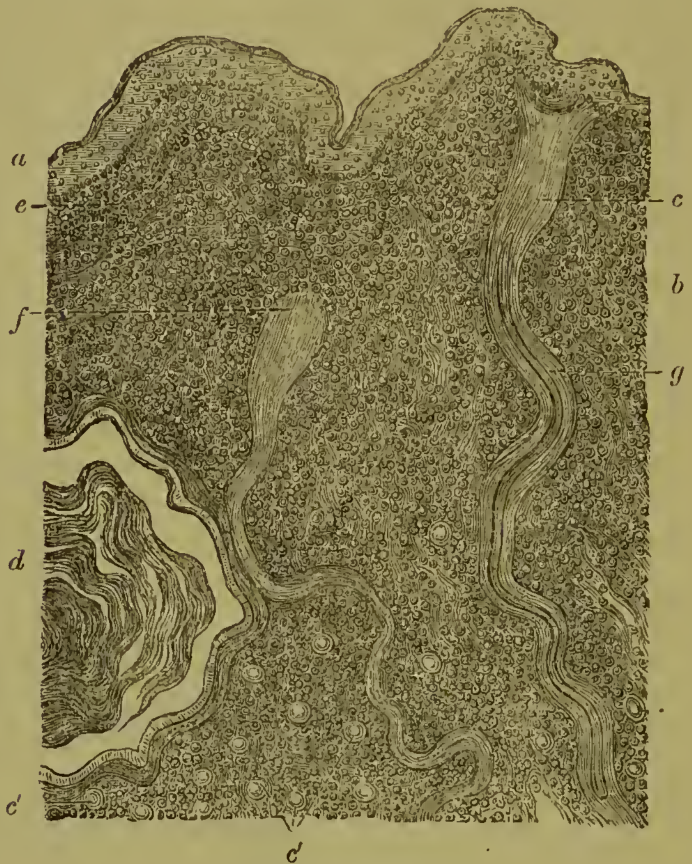
* A disease called *Ngerengere*, occurring amongst the New Zealanders, has been described by Dr. Thomson, and is clearly elephantiasis. Dr. Thomson's description is briefly as follows:—"It commences with a cutaneous eruption on the extremities, which extends over the trunk of the body. The eruption presents in some parts the oval patches and the copious exfoliation of a brown scaly morbid cuticle observed in lepra vulgaris (?); the irregular patches of psoriasis, and occasionally the innumerable fissures, the elongated and extensive cracks intersecting each other, of ichthyosis." There is frequently severe pruritus. The aspect of the disease is chronic, with a capricious course; the hair is gradually lost from the eyebrows, eyelashes, whiskers, beard—not the head, axillæ, nor pubes, however. "The tattoo-marks are not affected." The mucous surfaces suffer, the voice alters, the eye becomes inflamed, the general surface livid; "the face, nose, lips, forehead, eyebrows, become swollen and shining; but there are no tubercular deposits in them;" the skin is *not* anæsthetic to any degree. In about a year the distal bones of the extremities (fingers and toes) are removed one by one by molecular or interstitial absorption; "a small boil or blister, or dry crack, appears in the direction of the flexures . . . . the soft parts ulcerate by a dry process; the phalanx falls off, and the part heals." This is repeated year by year, the fingers generally being "dry, shining, and scabby-like." Death ends the scene before the wrist is reached, by diarrhœa, bronchitis, &c. The general health is not materially affected in the early stages. The disease attacks people under thirty years of age, generally after twenty; and the great majority (five out of six) are males. It may attack several of the same family. The fingers are affected to a greater degree than the toes; its duration ranges five or six years. From this outline we readily see that the disease is true leprosy. The Cacubay of Jamaica is probably leprosy.

First came brown stainings, then thickening, then a certain "paling and shrivelling" of the skin, with a dark scaly extending edge, and the blunting of the sensibility of the affected parts. The disease was not psoriasis. There was no hyperæmia, no hypertrophy of the papillary layer of the skin, no free scaliness, no affection of the elbows and knees. The disease was clearly "leprous."

Morbid Anatomy and Pathology.—Elephantiasis is a disease which is chiefly characterized by the production and the effusion into the fibro-cellular tissues of a new granulation tissue. There is an important difference in the seat of deposit in the two varieties;

Fig. 35.



(After Neumann.)

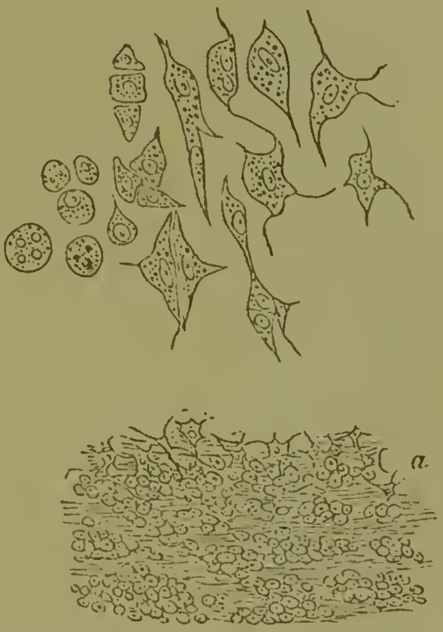
a. Is the epidermis and rete. *b.* Cutis with cell infiltration. *c.* Groups of colloid granules. *c'.* Colloid globules. *d.* Disorganized and dilated sebaceous glands with accumulated contents. *e.* Coiled hair follicle with atrophic hair. *f. g.* Sinuous connective-tissue strains, formerly hair follicles (?).

whereas in the tubercular form, the deposit—the new tissue—besides being more opaque, is deposited chiefly in the fibro-cellular structures, in the anæsthetic form it is more transparent, and is deposited, *par excellence*, in and outside the nerve tissue. In the tubercular form, the fibro-cellular coats and structures of all the organs except the pancreas are found infiltrated by the peculiar deposit; in the anæsthetic, there is often an absence of this feature in the internal viscera and their coats.

If a leprous papule be excised from the skin and examined microscopically it will be seen that in tubercular leprosy the deposit of new tissue is seated chiefly in the corium; it raises up the papillary layer, and extends to the subcutaneous connective tissue, surrounding the hair follicles and sebaceous glands, and more or less obliterating them after a while. There will be little of the normal tissue left when the deposit is excessive. The foregoing illustration (fig. 35), after Neumann, gives an excellent idea of the matter. This observer remarks that—"There is a continual production of small rounded cells, between which the intercellular substance becomes gradually more scanty, so that between the cells (arranged in groups and rows) are seen only narrow strands, of somewhat striped substance, the nuclei of which are rendered opaque by acetic acid." In fact the cell growths invade the fibrous textures gradually to more or less defacement of them.

Virchow has specially examined the leprous tissue, and remarks that in no case has he observed the transitional stages between spindle-shaped connective-tissue cells and simple granulation cells passing through nuclear and cell division so perfect. The cells divide and subdivide until a perfect form of germinal tissue is produced (see fig. 36).

Fig. 36.



a. Lepra tissue (after Virchow). Cells in division.

Dr. Vandyke Carter's and Danielssen and Böck's observations on anæsthetic leprosy still constitute about the only piece of information we possess as to the general morbid anatomy of that variety of the disease. They may be briefly summed up here. He found the brain, spinal cord, and the roots of the nerves healthy. Dr. Fabre, who studied the disease in Brazil, noticed the brain to be atrophied, its ventricles to contain fluid, the glandulæ Pacchioni numerous, and oftentimes a circumscribed suppuration in the membranes. Drs. Danielssen and Böck differ from Dr. Carter: they state that the spinal cord and its membranes are altered; the latter being infiltrated with an albuminous deposit, a layer being found between the arachnoid and the pia mater; the cord itself being indurated, its grey matter discoloured, yellowish, and devoid of vessels: the sheaths of the nerves and the various ganglia being similarly affected. They think the primary seat of the disease is the spinal cord. Dr. Carter, on the other hand, contends that the disease commences in the superficial nerves, and travels towards, but does not reach, the spinal cord. The sympathetic nerves are healthy; the heart, lungs, and intestinal canal healthy (Carter); the liver and kidneys fatty—in which all agree. The muscles generally are wasted and "fibrous," but not fatty, as the rule. The blood contains a more than ordinary quantum of albumen. The most important changes are observable in the nerves themselves. Dr. Carter says the nerve is swollen, dull red, or grey, or semi-translucent, rounded, and firm. The funiculus, not the connective coat, is the seat of disease; the nerve is evidently very tense. The place of "the clusters of nerve-tubules" is supplied by the albumino-gelatinous infiltration which has pressed upon them; the deposit surrounds the nerve-tubules, "mapping out, as it were, the area into polygonal or rounded spaces, in each of which lie the remains of one or two altered nerve-tubules." Hence the chief features are *firmness, opacity,* and *enlargement,* from foreign deposition. This is chiefly marked in the compound trunks which are situate most superficially, and in the "cutaneous nerves just after perforating the deep fascia:" those chiefly diseased are the ulnar, radial, and musculo-cutaneous; and they may exhibit these changes over the space of an inch or more; sometimes, indeed, a greater distance along the parent trunk towards the spinal canal. The bones are "rarefied" by "molecular destruction." As to the origin of the nerve disease, "it appears that, first of all, a clear material, probably albuminous, is deposited between the nerve-tubules, and in this nuclei, and subsequently fibres are developed, whilst the deposit itself may become fibrillated. The nuclei are often large, $\frac{1}{2000}$, $\frac{1}{1600}$ in. in length, and $\frac{1}{8000}$ in. in diameter, clear, round, and very numerous."

The *causes of elephantiasis* are not well made out. According to Dr. Vandyke Carter, all castes are tainted by the disease, especially those of primary aboriginal descent and the hill tribes. As regards social standing, the disease appears chiefly in the following classes: — Native Christians, Marathas, or low-caste Hindoos, Mussulmans and Parsees, vegetable-feeding Hindoos, &c.; Europeans are generally exempt. There is some little difficulty in ascertaining the influence of sex. The seclusive life of the females in countries where the disease abounds may explain in some degree the fact of its being more frequently *seen* in males. "In some of the leper asylums of the West Indies the number of the two sexes is about the same." The general opinion, however, is that males are much more usually leprous than females. Of 543 deaths of lepers in Bombay during twelve years, 409 occurred in males, and yet of 906 leprous patients treated in St. George's Hospital at Bergen, Norway, from 1841-6, 461 were males, 445 females. Dr. Carter states that the proportion of sexes amongst all lepers in the Bombay Presidency is 4·38 males to 1 female. The disease appears sooner in women than men.

Age has some influence; the *baras* generally appears before the age of twenty, the tubercular sooner perhaps than the anæsthetic form, which generally commences before the age of thirty. Male lepers greatly predominate between thirty and forty, and up to sixty. Damp and humidity, uncleanly habits, filth, and poverty, are conditions favouring the occurrence of elephantiasis. The anæsthetic disease is most common in India. Of 186 cases (Carter), 67 were anæsthetic, 40 mixed, 17 tuberculous, 14 exhibited the "baras" only, and 48 were cases of anæsthesia complicated with baras. There is no reason to think that syphilis has any relation to elephantiasis. In 64 of the 90 reports of Indian medical officers on leprosy, this connexion is absolutely denied.

The question of the essential and immediate cause of leprosy is no doubt a difficult one to determine.

In a document* recently circulated nearly all over the world with a view to obtain special information on the subject, Dr. Farquhar and I observe that "in estimating the cause of leprosy we must be very careful to distinguish between its *production* and its *propagation*. This distinction is a vitally important one, for we may have leprosy merely *propagated*, and that extensively, in certain districts and under conditions, whilst we attempt to seek for its *origination* in the action of some malarial poison, or some peculiarity in the food of the people, or something outside the individual, and are so led completely astray and to wrong inferences. We might, in discussing for example the explanation of the cause of leprosy in the fish-eating habit of the people of a certain locality, argue that this could not be the *cause* of the disease, because the habit was not observed in other districts where the prevalence of leprosy is common; but then leprosy might really be accounted for in these places by importation, or by the intermarriage of lepers or the leprous with the healthy. In fact, we might very erroneously come to reject a peculiarity of life or diet as an element in the causation among certain leprous communities, because it is not operative in other cases where the presence of the disease is really to be explained by hereditary transmission or importation. It seems to us in searching for the actual cause of leprosy, most important to determine in the first instance, in regard of any given place, whether the disease is only propagated or produced, and if partly propagated and partly produced, to what extent relatively."

I may add a few words in detail on these points, and first as regards—

A. *Propagation of Leprosy.*—The causes of propagation are mainly three:—

1. Intermarriage of the leprous or with the leprous.
2. Hereditary transmission.
3. Inoculation and cohabitation.
4. Vaccination (?)

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* Scheme for Obtaining a Better Knowledge of the Endemic Skin Diseases of India, drawn up by Dr. Tilbury Fox and Dr. Farquhar. India Office, 1872. (Official.)

First. As to intermarriage little need be said. It sufficiently accounts for the occurrence of a large number of cases of leprosy in the offspring of lepers, and the continuous intermarriage of people of the same caste in India, enforced rigidly by custom and superstition, tends greatly to the spread of leprosy hereditarily.

Secondly. As regards hereditary influence, this is most marked in children who are begotten by lepers far advanced in the disease. Of 623 cases to which reference is made in the Leprosy Report of the College of Physicians, 287 were known to be hereditary, and it is no doubt probable that this is not a correct proportion, since leprous taints in families are as much as possible concealed.

Thirdly. As to cohabitation and inoculation. Of course these are not such potent causes as intermarriage and hereditary tendency in spreading leprosy, but still it is probable that they may account for a certain number of cases. The Leprosy Report of the College of Physicians tells us that "the all but unanimous conviction of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is communicable by proximity or contact." In a general sense and under existing conditions the view here taken may be correct; but there is by no means a slight body of facts which seem to indicate that the inoculation with matter from a leprous sore—and this may occur in cohabitation and constant contact and in vaccination (?)—may give rise to the disease. It is certain that at present there exist certain conventional impediments to the occurrence of contagion which, so to speak, has no fair chance of operation. It is scarcely right to conclude that leprosy is not contagious because it does not show this quality under present circumstances. In order that it may be concluded with certainty that the disease is not contagious, it would be necessary to remove all the impediments which have been raised by tradition, popular prejudice, and legal enactments, and which have kept lepers practically in an isolated world of their own, and to secure the freest intermingling of lepers with the healthy of the community (which does not at present take place), and then to observe no increased spread of the disease, before it could *fairly* be said that leprosy cannot spread by contact.

But there exist, however, certain indications, that leprosy is apparently spread by the free contact of the healthy with the leprous in districts in which its appearance and spread can only be explained apparently in this way, and where in some cases the diet and *morale* of the people has marvellously improved and leprosy is not endemic in the district. Dr. Davidson, in speaking of leprosy in Madagascar, remarks: "It certainly deserves notice, that while the laws of Madagascar excluded leprous persons from society, the disease was kept within bounds, but after that this law was permitted to fall into disuse, it has spread to an almost incredible degree. This is no doubt due in part to lepers being allowed to marry without hindrance; but the natives are also strongly impressed with the conviction that the disease is inoculable." (Lep. Rep. p. 221). Then I will refer to another very remarkable series of facts, which are contained in the appendix to the excellent pamphlet of Mr. Macnamara on leprosy, before referred to, and are contributed by Dr. Hillebrand, of Honolulu. The disease was thought to be unknown in the Sandwich Islands till 1859, and on close scrutiny cannot be traced further back than the year 1852, or at the earliest 1848. Dr. Hillebrand has been at Honolulu since 1851. A recent census numbers the lepers at 250, or nearly 3½ per thousand of the natives, and he thinks this is below the average. The disease seems to have been brought by the Chinese in 1848. Here, then, the influence of hereditary transmission is out of the question. The disease arises in a clean nation: is unnoticed at first, and spreads slowly. And in no case can we better study the question of contagion. It so happens that the hygienic state of the natives and colony has improved, and not deteriorated. Animal food is within the reach of all. Labour is in great demand and well paid for. The natives are clad now like Europeans; formerly scantily, if at all. The climate is, perhaps, the finest in the world. Taxation is light. Yet, notwithstanding, leprosy spreads, and has spread from and around known lepers as from centres of contagion. Dr. Hillebrand saw the first leper in 1853, about twenty miles from Honolulu; in 1861 he had got very bad, and six other persons in his neighbourhood had become affected. The same thing was observed, in 1864, in another village, the tax-gatherer of which had been for years the only leper in the place. Dr. Hillebrand observes that "the natives are of a very social disposition, much given to visiting each other, and hospitality is considered as a sacred duty by them. . . . . About one-fourth avow contact with other lepers as a cause." Dr. Hillebrand gives the details of several very interesting cases. Candid and scientific inquirers cannot overlook the significance of such facts as these and the attacks of those who dress the sores of the leprous. Of course in such a case as that of Honolulu, where the disease is *propagated* apparently and not *produced*, it is no use looking for the *de novo cause* of leprosy.

It has been said that leprosy may be communicated by vaccination, but if so it must be infinitely rare and scarcely worthy of being taken into account.

It appears then that in searching for the cause of leprosy, allowance must be made for a large amount of *propagated* disease, through intermarriage, hereditary transmission, and contact with the affected; for, in fact, disease propagated from individual to individual. Having first therefore, in regard to any particular district, determined the amount and prevalence of propagated disease, the observer is in a position to investigate the *production de novo* of the remaining mass of disease.

B. The production *de novo* of leprosy (the true cause). In regard to this matter observers are directing their attention particularly to the influence of climate and diet. As regards *climate* it is to be observed that leprosy occurs in climates the most diverse. Still climate does seem to me if not to produce at least to greatly favour the development of leprosy, emphatically in those who have been depressed or whose health has been undermined by malarial poisoning. My experience is that those who become leprous have suffered from repeated attacks of "fever" in malarial districts. As regards *diet,* it has been the fashion to ascribe the origin of the disease to the consumption of fish, especially such as is stale or bad; others again have looked upon the consumption of rancid oil, others that of bad cereals, as the cause of leprosy. Now as regards the influence of a fish diet, leprosy is very abundant in certain sea-coast districts and among fish-eating people. There is no question of this. In Egypt the natives feed (as I have myself observed) on a beastly compound of semi-putrid fish, called "fasciah;" in Norway again the consumption of fish is large, as also at the Cape and in parts of India, where, in the fish districts, the folk eat quantities of foul fish; and Dr. Carter observes with regard to occupation, that many of the lepers "are fishermen, many ryots, all of whom lived more or less on rice and dried or salt fish;" but in his more recent report (1872—Leprosy in Bombay Presidency) he remarks that "there is no clear evidence that any special article of diet either excites or predisposes to leprosy." There are many exceptional occurrences in places where leprosy is endemic, in disproof of the theory of the causation of leprosy by ichthyophagic habits.

Dr. Richards, of Balasore,* has very recently stated that—"The inhabitants of Balasore, or Northern Orissa, are, as would be supposed, from the topographical features of the district, a fish-consuming community, and, like the Burmese (who prefer the stinking *nga pee* to fresh fish) they consume fish which is in a semi-putrid state. Of this fact one is constantly reminded when driving through the station by the stench that issues from the baskets of fish in transit to the markets in the interior. Under these circumstances, according to the fish theory of leprosy, we should expect to find the disease very prevalent here. Such, however, is not the case, but on the contrary it is very uncommon. It is seldom that a leper can be seen at the bazaars, or indeed anywhere in the district, except now and again an up-country pilgrim, who, by the way, *never eats fish.*

"In the district of Bancoorah, where fish is very scarce, leprosy prevails to a very great extent, more especially amongst the members of the lowest castes, who, from their circumstances, consume the smallest quantity of fish. Moreover, the disease is said to be on the increase, though the supply of fish is diminishing.

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* Indian Medical Gazette, May 1, 1872.

"In England we find the converse of this—a diminution which amounts almost to a total disappearance of the disease synchronously with an increase of the fish supply. From the tenth to the sixteenth century, at a time when fish was comparatively scarce, leprosy was frightfully common; but since that time, happily for us, instances of the disease are extremely rare, though fish is more generally consumed than it was. Any deductions drawn from these facts would seem to imply the very reverse of the conclusions arrived at by Mr. Hutchinson."

It is very advisable that we should have more facts on this point, and with reference to the influence of the large and constant consumption of oil of a rancid kind.

Another peculiarity of diet which may have great influence on the genesis of leprosy, is the absence of such vegetables as contain a large amount of potash. Mere poverty of diet will not suffice, as the case of Ireland very clearly shows, to produce leprosy; for in this country the wretched state of the population has not produced leprosy: it may be in great measure on account of the abundant consumption of the potato. It is a curious fact, worthy of mention in this place, that leprosy has much diminished in Iceland since the introduction of the potato into that country. This statement I make on the authority of Dr. Hjaltelin, the chief physician of Iceland.*

The use of grain grown on uncultivated land is a matter that demands every consideration. In England it is usual to hear the people of that great tract of country, India, spoken of as of one race; but it would be perhaps more appropriate to speak of the various nationalities of Europe as one people, than to believe that the Bengalee near Calcutta, the Rajpoot of Oudh, and the Puthan of the Punjab were one people. As to climate and modes of living, these races are also very differently situated; but there is much similarity in one respect in regard to their diet—that the use of grain grown on uncultivated land is very common with these different races. My friend Dr. Farquhar is inclined to think that the use of such grain may have much to do with the genesis of leprosy. The point is one of much interest, but requires careful elucidation. The reader will remember that pellagra, which has much analogy to leprosy, is unquestionably caused by the consumption of diseased maize, and analogically speaking, this fact gives much countenance to Dr. Farquhar's view. The late Dr. Kinloch Kirk† supposed, as the result of his observations, that the use of leguminous seeds, commonly ranked in India under the name of dâl, is capable of giving rise to something like leprosy, and especially in the case of the dhal derived from the cytisus cajan, and called "urhur." This is consumed by the poor under the idea that it enables them to bear great labour; it gives rise as an occasional meal to general disturbance of health and rheumatic pains. Some eat it constantly, and the final results are urticaria, a sense of heat in the stomach, redness of the mucous surface of the mouth, bronzing of the skin, sponginess of the gums, burning of the hands and feet, dryness, harshness, and cracking of the same parts, rheumatic pains, white spots indicating a leprous taint about the body, and lastly, confirmed leprosy. Another dâl, the lathyrus sativus, we know, induces paraplegia. How far the use of dâl may be the cause of leprosy requires to be determined. But it must be recollected, after all, that leprosy may result not from the operation of any positive poison in climate or in diet, but negatively from the absence in the diet of certain principles, such as nitrogen and potash, and that it is accelerated by bad residence, uncleanliness, poor diet of all kinds, fever, and the like, and transmitted in the majority of cases hereditarily.

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* Dobell; Report on Progress of Medicine, 1869, p. 297.

† Madras Quarterly Journal of Medical Sciences.

These remarks, it is to be hoped, will suffice to indicate the direction in which we should attempt to make out the *causa vera* of leprosy.

Treatment.—Until a recent date the leper has been looked upon as an outcast afflicted with an incurable malady and deserving no comfort and very little attention; hence the treatment employed has been of the most unsatisfactory kind. The whole gist of the latter part of the Leprosy Report is to show the decided benefit to be derived from the adoption of means to improve the physical and moral condition of the leprous poor. "It seems indisputable that as the agricultural and horticultural condition of Britain advanced and the diet of the working classes was bettered . . . . . leprosy became less common," &c. And in reference to India, the committee observe that, "with its 150,000,000 of inhabitants, the question of the food of the people, in its probable relations to the wide-spread prevalence of leprosy and other endemic disorders, is a matter of the highest interest in an economical as well as in a scientific point of view. That a marked change in the habits of the native population will ensue upon the increase of divers industries, the improved cultivation of the land, the less frequent recurrence of famines, and the consequent amelioration of their general condition from year to year; and that better food, better clothing, and better housing, with greater personal cleanliness, will lead to the abatement of leprosy, may be confidently anticipated."—p. lxxv.

The actual treatment in the past has consisted in preventing the intermarrying of actual lepers; removing them from humid malarial localities; altering and correcting bad modes of living in every particular; securing good exercise and a dry air; if possible, change of climate—all very excellent. In the actual disease, repeated venesection, counter-irritation of the course of the nerves, various baths, arsenic, mercury, cantharides, &c., have been tried especially, but with no avail. Hydrocotyle Asiatica, Ginocardia odorata, or chaulmoogra (used by Dr. Mouat), the Asclepias gigantea or mudar, are looked upon as specifics; lately Veronica quinquefolia has been praised: but all have failed and disappointed their advocates. The local treatment by arsenic was once recommended: an ointment, gr. x — xxx of arsenious acid to ℥j of lard being rubbed into a patch about six inches large, for a fortnight, so as to produce *pustulation*. This is declared to have been often followed by great relief, the disease being treated bit by bit until it disappears—so it is said.

There are two indications upon which the treatment of leprosy should be based. The first is, to check the increase of disease by improving the general health of the patients, and by placing them under the most favourable hygienic conditions possible. The second is, to promote the absorption of the leprous deposit. This is effected by the employment of both general and local measures.

Now I believe that leprosy is to be ameliorated not in one but several ways. In some cases quinine in large and continued doses combined with occasional aperients will do very much good—at least this is my experience in England, and I think it does check the formation of granulation tissue. I have given gr. xx twice a day for some time, gradually getting up to this dose, and with great benefit.

I do not like mercurials in the disease, though iodide of potassium and iron together are occasionally of service. I think it of consequence to use diuretics when the urine is scanty. I have no other remedy but quinine for leprosy, but I supplement it by iron, cod-liver oil, and other remedies to meet concomitant conditions.

Locally the tubercles may be made to disperse by not one, but several local applications—ex., carbolic acid as recommended by Dr. Fleming, in India.* This gentleman remarks that the application first *blackens* the skin, instead of rendering it white, as is the case where healthy tissues are concerned. In some of his first cases Dr. Fleming "applied the carbolic acid in the proportion of 1 : 8, and occasionally some of the worst spots were touched with the pure acid. Latterly, it was found more convenient to employ it in a more dilute form 1 : 16 (ʒj to ℥ij). The particular diluent employed does not seem of much consequence. The most generally useful is tilli oil, but any other bland oil would of course be equally applicable, and glycerine and water produces a more elegant and very useful liniment."

"In the more advanced cases of the disease, some care is required in not pushing the application too far, as otherwise considerable excoriation of the cuticle is apt to take place, while from the general insensibility of the surface, the patient is unable to give warning when this is likely to occur. However, on leaving off the application for a few days, and anointing the parts with sweet oil or simple cerate, the lost cuticle is soon replaced, and but little inconvenience results."

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* Indian Medical Gazette, 1871.

Arsenious acid has also been used with success.* The mode of its application is as follows: An ointment of from gr. x to gr. xxx to ℥j of lard is rubbed into the skin for a fortnight or so in different places, so as to produce pustulation; on leaving off the remedy, the irritation and swelling subside, and the part treated gradually mends, with subsidence of the tubercles, it is said. Generally, a patch some 3 or 4 inches square is treated at one time. I have no personal experience of this mode of treatment.

The oil of cashew has been much lauded as a local remedy. Some cases do well under the action of cashew, others not so well—my experience, however, is not great at present as regards this remedy. The Beauperthuy and Bhau Daji treatments have been much lauded of late, but as far as the published evidence goes, they alleviate, not cure, as does the quinine plan of treatment I adopt. The Bhau Daji treatment is a secret, kept so by its prescriber. It is therefore unworthy of scientific credit at present. The Beauperthuy treatment is given officially by Dr. Bakewell in a "Correspondence Relating to the Discovery of an Alleged Cure of Leprosy," published as a parliamentary paper, in 1871:—

> "The patients selected for treatment should be in an early stage of the disease, that is to say, should not have been suffering from leprosy more than two years, and only those should be chosen in whom the disease is entirely confined to the skin, or has very slightly invaded the mouth. If the larynx has been attacked, and in other respects the patient is eligible, he should be distinctly informed, *if treated at all*, that it is only with a view to amelioration, and not to cure, that his case is undertaken. So far, no case has been absolutely cured in which the interior of the mouth or the larynx had been invaded. The slighter the case the more easy and rapid is the cure. Both anæsthetic and tuberculous cases are eligible.
>
> "The treatment is of three parts—1st, hygienic; 2nd, external applications to the diseased parts; 3rd, internal medicines.
>
> "The hygienic treatment, which is absolutely essential, and without which nothing but the most temporary improvement can be attained, consists of pure air; nourishing food, including a moderate quantity of fresh meat daily; abstinence from all salted meat or fish, and from pork, whether salt or fresh; a sufficient quantity of fresh vegetables must be given; and if the patients are habituated to its use, a moderate quantity of light wine may be given, but this is not necessary.
>
> "The external applications consist of (*a*) soap-and-water baths twice a day; frictions over the whole of the skin with oil. Cocoanut-oil is always used at Trinidad and Cumana, but olive-oil might be employed if more convenient. The oil is well rubbed in and allowed to remain on for three or four hours, when the body is thoroughly cleansed by a soap-and-water bath.
>
> "The oil of cashew-nut is applied, by means of a small piece of sponge, to the diseased parts. This application should be made at first only over a small portion of the skin, as large, for instance, as the hand, and when the effect of the first ap-

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* See Dublin Medical Press, April 20, 1864.

plication is seen, subsequent ones may be made larger if deemed advisable. The effect of the oil is to produce, after from twelve to twenty-four hours, vesication. The skin should, if possible, not be broken, and the exudation should be allowed to remain and dry on, so as to form a crust. In about ten or twelve days this will fall off, leaving the skin clear and free from any ulceration underneath. If the parts are numbed, but not completely anæsthetic, sensibility will in general be completely restored by the first application ; if the anæsthesia is complete, it may require two or three applications to restore it.

"After the first application or two, the patients will generally be anxious to have much larger surfaces operated on. I do not think it safe, however, to do more at one application than a leg or a forearm, or an equal surface elsewhere. *The applications should not succeed each other at intervals of less than a week.*

"If the patients are troubled, as is very often the case, with herpetic or other eruptions, Dr. Beauperthuy employs two liniments with great success. The one called

"*Liniment No.* 1 is made thus :—Saturate an ounce of alcohol with iodine. When the solution is complete add a solution of caustic soda to excess ; a little more or less is of no consequence, provided there is enough to unite with all the iodine ; then add twenty-four ounces of olive or cocoanut oil. This must be well shaken up before it is used.

"*Liniment No.* 2.—Take the yolks of two eggs ; balsam of copaiba, four and a half fluid ounces ; mix to form an emulsion ; add one pint of olive or cocoanut-oil.

"May be employed in all those cases where there is a squamous or scurfy condition of the skin, in lieu of the oil baths.

"Where the feet are affected, as it is not convenient to use the cashew-nut oil for them, baths of hot cocoanut-oil may be used night and morning. These must be superintended by a skilled attendant, who tests the heat with a thermometer, as the patient's sensibility will generally be deficient or null, and if trusted to him he might scald the feet without knowing it. The heat should not exceed 100° Fahr.

"The internal medicines administered by Dr. Beauperthuy are perchloride of mercury (Ph. Br.), in doses of one-fifteenth to one-twentieth of a grain twice a day for adults. In cases where mercury is contra-indicated, Dr. Beauperthuy gives carbonate of soda, in doses of ten grains to a scruple twice a day. I have seen one case in which I tried the alkali, and which progressed quite as satisfactorily as those to whom the mercurial was given.

"It is of course to be understood that the treatment may be interrupted or modified, if any complications occur. Should the mercurial affect the mouth, or cause any irritation of the intestinal tract, it should be discontinued and the alkali given."

Dr. Milroy tells me that as the result of his observations he has come to the conclusion that leprosy can be alleviated, but he attributes much of the success of Dr. Beauperthuy to the employment of hygienic measures in connexion with a liberal allowance of fresh meat.

CHAPTER XV.

HYPERTROPHIC AND ATROPHIC AFFECTIONS.

Under the terms hypertrophy and atrophy may be included all cases of development in excess of the normal tissues of the skin on the one hand and wasting on the other : the atrophy and hypertrophy being in each case primary conditions.

The maladies ranking under these two classes may be arranged as follows :—

A. *Hypertrophic diseases,* comprising—1. Diseases of the epithelial layer of the skin, including pityriasis, callosities, corns, and horns, in which the epithelial tissue is specially affected. 2. Diseases involving the dermic portion, in which the true skin is affected with or without the epithelium. In some cases the papillary layer is chiefly affected, but in connexion with augmented production of the epithelium also, as in ichthyosis and xeroderma. In other cases the fibro-cellular tissue of the corium proper is the special seat of change, as in the diseases termed scleroderma, keloid, fibroma, bucnemia tropica or elephantiasis Arabum, and dermatolysis. 3. Diseases seated in the vascular structures, including such growths as vascular nævi.

Now it is just a question whether pityriasis is not essentially an hyperæmic condition, but I have ranked it as an epithelial hypertrophy. *Keratoses* is the term used by Hebra and Kohn to include those diseases which are characterized by thickened conditions of the epidermic tissue of the skin—ex., warts, corns, horny tumours, ichthyosis. The class being subdivided into two groups, the one including those diseases in which the papillæ are unaffected—ex., callosities, corns, horns ; the other in which the papillæ are enlarged—ex., ichthyosis and warts ; but even this division is arbitrary, for in ichthyosis the tissues of the deeper part of the corium are often changed, and in callosities the papillæ may be hypertrophied ; whilst in corns they may be atrophied. The primary mischief, however, begins in the epidermis in these two latter. I prefer my own subdivisions of hypertrophy above given.

B. *Atrophic diseases,* including general wasting and senile atrophy, and local or linear atrophy, which will be incidentally noticed together with morphœa.

HYPERTROPHIC AFFECTIONS.

I will first deal in detail with hypertrophic affections. It will be understood that no reference is made in this chapter to secondary or accidental hypertrophy—the consequence of congestion or inflammatory conditions, but to those diseases in which hypertrophy is the prominent or only condition.

I. HYPERTROPHIES OF THE EPITHELIUM.

I have been in doubt as to the position I should assign to pityriasis, in which, as a rule, there is simply hyperformation of epithelial scales. I think it best to place it under the head of hypertrophies for the present.

Pityriasis.—This common form of disease may be discussed in a very few words. It is a primary form of disease—" a superficial cutaneous affection, sometimes accompanied by a slight rosy discoloration of the skin, or even a discoloration of another kind, but always exempt from those alterations of tissue which have been observed in the other elementary forms which we have described, and which scarcely presents any other characteristic phenomenon than a desquamation of the epidermis; this latter is detached in small whitish lamellæ, or falls off in a fine, and, as it is called (from its analogy with wheaten flour bran—*furfur*), furfuraceous or branny powder." There is no exudation into the skin in ordinary pityriasis. The local symptoms are itching and heat. The redness varies much.

Authors have made four main species—(1) P. versicolor, which is a parasitic disease, and will be found under the head of tinea versicolor. (2) P. rubra, which is primarily a hyperæmia associated with disturbance of the trophic nerves, and has been described before (see p. 253). (3) P. simplex, to be now described; and (4) P. nigra, which I do not know except as a parasitic disease, accompanied by pigmentary staining. The only variety I need notice here is P. simplex.

Pityriasis simplex, according as it occurs in different situations, has received the appellations capitis, palpebrarum, pudendalis, oris, labialis, plantaris, pilaris (see p. 254). The history in all these cases is the same: a slight itching red patch appears, and then white scales form thereon, which are constantly detached: sometimes a slightly red zone circumscribes the scaly spot; the scales are continually shed and reproduced; there are no other changes. The disease is met with on the bodies of delicate women and children, especially the head, where it constitutes one of the varieties of " dandriff." Pityriasis simplex is mostly a disease of early life. It is mostly confounded with seborrhœa; in fact, seborrhœa contributes the great bulk of cases of " dandriff," and is often misnamed pityriasis capitis.

The Pathology and Cause.—The seat of the disease is no doubt the deep layers of the epidermis, and the nature of the disease an excess in the cell formation of the cuticle. This cell proliferation is an evidence of a somewhat lower type of vitality, and implies nutritive debility. This may be the result of hereditary peculiarity, and it is certainly evoked by irritants of all kinds acting upon a debilitated system.

Diagnosis.—Pityriasis may be confounded with (1) *Seborrhœa.* The scales of the latter are, however, dull, white, and dirty; they stick to the surface, and are made up of epithelial scales, with a large amount of fatty matter, whilst the sebaceous glands are often noticed to be distended in the disease. (2) *Tinea circinata* (parasitic) is always known by its circular character, its "frayed" aspect, its clearing in the centre and extension at the edge by quasi-vesiculation, and the presence of the parasite detectible by the microscope. (3) Pityriasis may imitate *eczema*, but it differs from eczema in the fact that there is no "discharge," and the scales are epithelial and not composed of inflammatory products. There is also little infiltration, no vesicles, pustules, and the like, and little pruritus. In all cases of scaly disease I hold that a microscopic examination should be made in order to determine the epithelial, or fatty (seborrhœa), or "blastematous" (eczema, herpes) nature of the scaliness.

Treatment.—In the case of pityriasis simplex local measures suffice. Where there are symptoms of local irritation—ex., redness and itching, an ointment made of two drachms of liquor plumbi and an ounce of lard will suffice. The principal object, as in so many other affections of the skin, is to soothe and slightly constringe. When the disease has become chronic, stimulating applications may be used—the white precipitate ointment, the ung. hydr. nitrico-oxyd., or an ointment made of two drachms of ung. hydr. nitratis, to an ounce of lard, are serviceable. But when the disease is more extensive, and the scaliness free, it is necessary to give general tonics. In this case I use a liniment of equal parts of olive-oil and lime-water freely, and subsequently nitric acid ointment (♏x—♏xx to ℥j adeps), and commence with tonics—iron, quinine, nitro-hydrochloric acid, cod-liver oil, or arsenic, in case there be anæmia, dyspepsia, loss of flesh, nervous debility, &c. There must always be perfect cleanliness, thick greasy hair should be well and repeatedly washed. The food should be unstimulating, spirits and beer avoided if there be any "heating" with them. The bowels should be made to act regularly and freely. In chronic indolent cases, the following will be of use:—ammonio-chloride of mercury, and nitric oxide finely powdered, of each fifteen grains, olive-oil and adeps, each an ounce, with some scent to make the embrocation pleasant. Another form empirically successful is liq. ammon. fort. ʒij, sp. rosmarini ℥ss, glycerinæ ℥ss, aquæ ℥viij, to be used twice a day, a little borax ointment being used after each application of the lotion. The mineral waters of St. Gervais, Aix-la-Chapelle, Pyrenees, Barèges, and Luchon are recommended.

Corns.—These are composed of an accumulation of the cells of the horny layer, which, generally, are pressed together into a conical mass that dips deeply downwards. The papillæ beneath may be enlarged, but are usually atrophied. The corn mass presses even upon the rete cells, and it also obliterates more or less the sweat glands. Corns are caused by pressure and friction; they are of two kinds—the hard ordinary corns, and soft corns. The soft corns occur between the toes, and being saturated with the secretion of the part, are moist and soft; generally there is some serosity effused under the upper layers or the bursæ normally found at the parts over the joints of the toes where the corns form, enlarge and pour out fluid, which is discharged from a little central aperture. The treatment of these minor affections need not be detailed.

Callosities are merely hardened conditions of the skin produced by pressure, differing from corns rather in the fact that they are on a larger scale than by any other feature. Those who visit Vienna hear a great deal about callosities, to which much attention is paid, as indicative according to their seats of various occupations, but all that I need say about them is that they are caused by pressure and friction.

II. HYPERTROPHY OF THE PAPILLÆ AND EPITHELIUM CONJOINED.

Horns.—These may be sebaceous in origin; usually, however, they are made up of hypertrophied papillæ, each containing one or more vessels and being covered by epidermis; on section they have a "granular texture pierced with small orifices, and when dry, numerous concentric cracks." These orifices are the sections of little blood-vessels; "a clear amber-coloured circular area surrounding each of the vessels, which are separated by the general granular structure of the mass, incapable in the compact part of the horn of being reduced to its ultimate original elements." The structure appears to be best seen at the edge of the horn, where "the vessels are seen occupying the axis of the papillæ, which are indicated by the clear cylinder area surrounding the vessels, the limit of the clear cylinder appearing to be the basement membrane of the papillæ, and presenting on an oblique section a somewhat jagged outline. The central parts of the horn are more compact and less vascular than the outside." (Edwards.)

Verrucæ, or warts, are little raised tumours, sessile or pedunculated, hard, generally round, rugose, and mammillated. They are made up of coherent and enlarged papillæ, each containing a loop of blood vessels, and more or less nerve-tissue, especially at their base. I have seen them cover the face and present the appearance of disseminated lichen. In other cases they have been large and in masses. The pedunculated warts and so-called *acrochordon*, are often the emptied sacs of sebaceous glandular enlargements—*e. g.*, molluscum. The sessile warts, or the true hypertrophous papillæ, are seen mostly on the hands in children; they may be multiple, solitary, or aggregated in clusters. They may form a flat mass or present a digitate appearance. Warts are often the result of syphilis about the anus, vulva, penis, but they may also arise from simple irritation. *Verruca necrogenica* is the name given by Dr. Wilks to the warty growths which occur on the back of the finger-joints of those who are much engaged in making post-mortem examinations. "They are brown circular raised patches of morbid epithelium, giving the appearance somewhat of epithelial cancer," and curiously enough, if removed, they grow again; they are caused by the acridity of the fluids of the dead body. I have seen one or two very curious examples of warts. On the little finger (at its outside) of a woman, for instance, a mass of warts packed closely together, and forming a patch 1¾ inches long and ½ inch in breadth; around the base it was hard, elevated, reddened, something like lupus; it might be called *verruca granulata*. I have seen several cases in which the individual papillæ of the skin, especially in the face, have become enlarged, their vascular part being involved, yet not sufficiently (in excess) to make the disease nævus; it was a general equable hypertrophy of the structures composing the papillæ. Condylomata are hypertrophied papillæ moistened by secretion, and containing rather more fibrous and elastic tissue than usual. Formulæ will be found for caustic applications elsewhere.

The causes of warts are unknown; they appear sometimes to be contagious. The treatment consists in destroying the abnormal growth by caustics—the acid nitrate of mercury, caustic potash, arsenical paste, perchloride of iron, or chromic acid. Dr. Bulkeley recommends for the warts of children the application of a mixture of equal parts of dilute hydrochloric acid and muriated tincture of iron.

XERODERMA AND ICHTHYOSIS.

These two diseases are different forms of the same malady—the main features in each case consisting in the free formation and accumulation of epithelial scales, intermingled with more or less fatty matter, and forming branny scales or hard, horny, platy masses: in connexion with hypertrophy especially of the papillary layer of the skin, but the corium in some degree also: and in the deficiency of glandular secretion, whereby the skin is rendered harsh and dry. It has been usual to describe a true and false ichthyosis according as the scaliness is made up of epithelial cells mainly, or associated with fatty matter in large amount. The distinction is less real than is generally supposed—the difference is one of degree, not in kind.

Now ichthyosis is a primary form of disease; it is not inflammatory, but often hereditary, and mostly congenital. A localized caking on the surface may result from sebaceous flux, and this will be described under the head of glandular diseases; it is different from ichthyosis, a congenital disease associated with a generally disordered state of skin, which is not present in sebaceous flux. I will now proceed to describe xeroderma and ichthyosis in detail.

XERODERMA (*dry skin*).—In this variety of disease the surface is peculiarly dry, harsh, ill-nourished, and wrinkled, instead of being soft, elastic, and smooth. It seems as if the skin had not been developed so as to keep pace with the growth of other parts. There is less subcutaneous fat than usual, and therefore the natural lines and furrows are mapped out more distinctly than usual. The skin looks dirty, the nails are ill-formed, whilst the surface is covered by thin cuticular scales or plates, free and loose at their circumference but attached in their centre. The aspect of the scaliness varies somewhat: it is mostly furfuraceous on the head, but is disposed in the form of plates on the face, and presents a farinaceous aspect about the eyelids, the neck, and the trunk, where it may be scaly. When the scaly condition is well marked the variety is termed *ichthyosis squamosa*, or *simplex*, but this is merely well-marked xeroderma, or rather I should say there is no line of demarcation between the conditions termed xeroderma and ichthyosis; the difference is only one of degree as regards the epithelial collection. The skin is functionally disordered in xeroderma. The glands therefore do not secrete properly—the perspiratory, hence the dryness; the sebaceous, hence the collection of altered sebaceous matter with the epithelial scales into large plates or horny masses. This form of disease may show itself immediately after birth, but its appearance may be delayed for one, two, or several years after birth, and I think I have seen it develop rapidly after general eczema which has considerably disordered the circulation of the skin.

ICHTHYOSIS.—When the epithelial collections observed in xeroderma are exaggerated and marked, the term ichthyosis is applied to the disease. The scales in this form of disease vary in colour and thickness, and according to the aspect presented by them in these respects, varieties of ichthyosis have been made—the most exaggerated condition being termed *ichthyosis cornea*, or *hystrix*; the least expressed form of disease *ichthyosis squamosa*, which is, indeed, only a well-marked xeroderma, as stated above. I have seen the characters of xeroderma well marked over large tracts of the body, and those of ichthyosis hystrix localized to particular regions of the same subject.

The scales of old standing ichthyosis become discoloured and blackish, and this is seen in the *squamous* as well as the *hystrix* variety.

In the slightest forms of disease, the features are those of xeroderma well marked, and generally there are little areas where the collected epidermis mixed up with sebaceous matter is caked on to the part.

When the latter feature is marked there are seen over the body in different parts, not scaliness, but a dark incrustation like dried black mud in aspect, and made of small polygonal masses which can be picked off. These masses stand one or two lines high. In the most exaggerated cases (hystrix) the whole of the limb, the leg or arm, is covered over by the same caked masses, the individual portions of which assume the aspect of spines, which may be very large. The affected part then has the aspcet of the bark of a tree. The masses in all cases can be picked off, and the skin beneath looks dry and shrivelled; in some cases the openings of the sebaceous follicles are seen to be somewhat dilated, and on the under surface of the detached plate are seen little plugs which have fitted into the ducts of the sebaceous follicles. In other cases, especially about the ankle, &c., the papillæ of the skin may be considerably hypertrophied. Patients affected by any form of ichthyosis are somewhat thin perhaps, they are sometimes stunted in growth, they feel the cold weather terribly, and when this is severe or windy the skin becomes irritable, tender, and often cracks. The parts especially affected are the knees, elbows, and those about the ankles, the wrists, and the axillæ. But the extent of surface over which the caking is marked varies: it may be pretty general or local; but however extensive it is, the skin generally is dry, harsh, mapped into small spaces, and scaly.

After the above description the reader will readily comprehend that xeroderma and ichthyosis are degrees of one and the same thing, only in the former there is chiefly epithelial squamation and less fatty matter secreted; in the latter the sebaceous secretion does not pass away insensibly as usual, but gets incorporated with the epithelial cells into plates, which are hard, dry, and dark-coloured, and vary very considerably in thickness.

Ichthyosis is congenital, or at all events develops soon after birth. It is also hereditary, and affects the same sex throughout several generations.

Ichthyosis of the Tongue.—Some writers have described an ichthyosis of the tongue. Mr. Hulke* gives a case, which was characterized by yellowish-white, raised, tough, leathery patches; which are clinically distinguished from syphilitic or cancerous disease; and there is a case, I believe, described in "Holmes's System of Surgery." In May, 1872, Dr. Mercer Adams, of Boston, was good enough to send me a most interesting case, in which the whole middle of the tongue was covered by a dirty white, tough, hard growth, made up of epithelial matter pressed closely together in connexion with hypertrophous papillæ. There was a central ridge a quarter of an inch high. The formation was very dense and very hard. It looked like moistened ivory. The man had had the disease many years, and was in good general health. The growth sometimes came away, and then re-formed.

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* Proceed. Med.-Chir. Soc., Feb. 28, 1865.

Dr. Church* has put on record a case of the kind, which occurred in a girl, aged fifteen, who was affected by the disease on one side of the body and about the tongue and palate.

Now I am disposed to question the propriety of applying the term ichthyosis to the tongue. My reason is, that this so-called ichthyosis—which I would much prefer calling keratosis, or something of that kind—is a purely local affair. It is not apparently congenital, and its general aspect is somewhat different from the discoloured skin of ichthyosis; and lastly, there is no admixture of sebum with the epithelial matter. But I chiefly object on the ground of its local nature. Dr. Church's case is a very exceptional one—so exceptional (limited as it was to one side) that it is impossible to draw any general conclusions from it.

Morbid Anatomy.—If a fairly marked ichthyotic patch be examined minutely it will be found to be made up—proceeding from without inwards—of lamellæ formed by flattened-out epidermic cells in great numbers. The cells are arranged in a striated manner, and these cells are seen to be undergoing fatty change in old cases of disease. The cells of the rete Malpighii, and especially those of the inter-papillary portions, are greatly augmented in amount; in fact, the whole of the horny and mucous layers of the epidermis are sometimes enormously hypertrophied. But the papillæ of the cutis are much altered: they are enlarged and elongated, their vessels are very much dilated; and, in fact, it is around the elongated papillæ as an axis that the epidermic cells arrange themselves in a concentric or stratified manner; and, according to Rindfleisch, it is sometimes quite possible to get from off the diseased surface a shell, as it were, of epidermic scales, with a small central cavity which has been occupied by the elongated papilla. This disposition of cells and papillæ explains the breaking up from above downwards of the caking formed on the surface into separate and distinct small blocklets. The subjoined figure (fig. 37) represents the changes above described.

But not only are the changes found in the papillary layer and the epidermis, but they are also met with in the corium. The bundles of its fibrous tissue are often thickened, and in well-marked cases of ichthyosis the hairs atrophy and the sebaceous glands are more or less obliterated.

Diagnosis.—No mistake can be well made when the disease is fully developed. The congenital nature of the disease, with the dry, harsh, non-perspiratory, scaly, ill-nourished state of the skin, showing the peculiar dark caking upon it, are diagnostic features. When the disease occurs, as it does occasionally, in a comparatively localized form, it may be confounded with *seborrhœa*, the scales of which have become discoloured; but in the latter disease there is no papillary hypertrophy, the plates are thinnish, and cover over the dilated ducts of the sebaceous glands instead of the hypertrophied papillæ, and there is no evidence of concomitant malnutrition of the skin generally.

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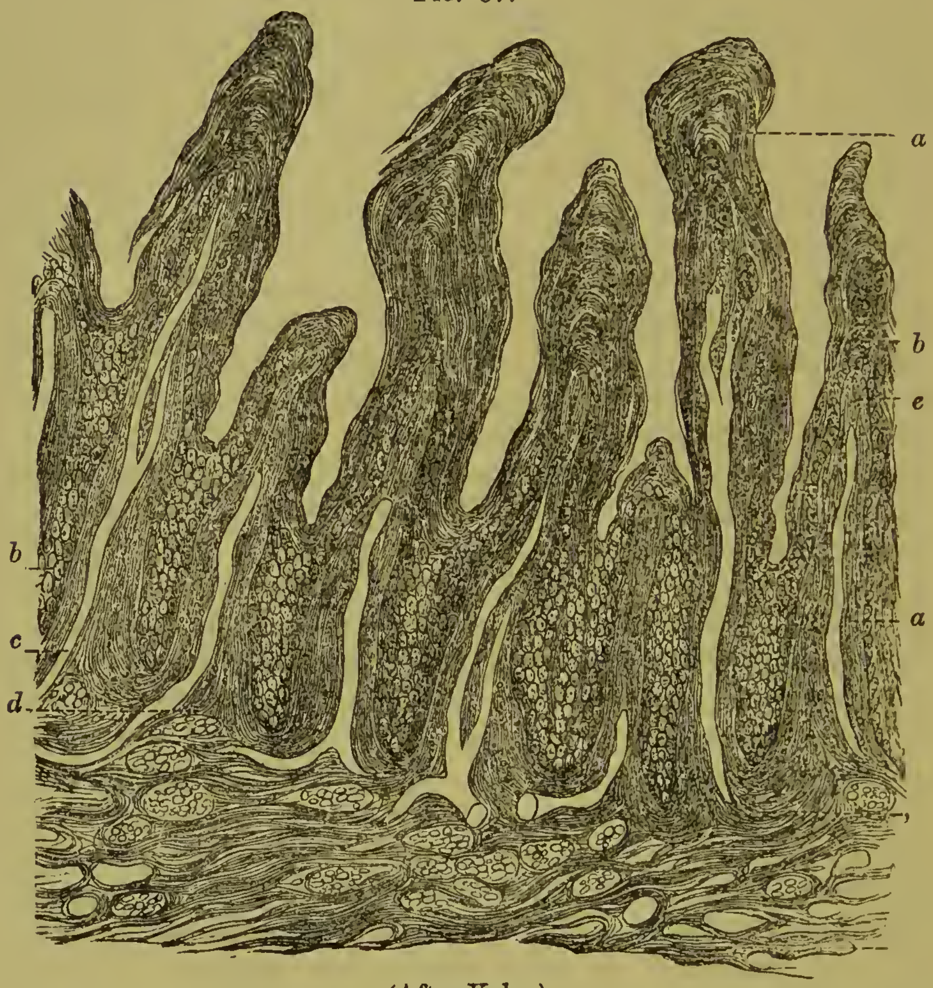
* St. Bartholomew's Hospital Reports, 1868, p. 198.

Fig. 37.



(After Kohn.)

Section of ichthyotic skin. *a.* Accumulated epidermic layers. *b.* Rete Malpighii. *c.* Distended blood-vessel. *d.* Cells of cutis. *e.* Elongated papilla.

Treatment.—The disease cannot be cured, but it can be relieved very greatly; and, in fact, the patient can be made quite comfortable with it. I have always been successful in getting patients into a continuously comfortable condition. In the first place I am careful to see that they are very cleanly, and that they are well fed and clothed. I then give cod-liver oil, and such remedies as quinine. I don't exhibit arsenic, because for the life of me I don't see the reason of giving it. Local remedies are the most important. In xeroderma, any plan which systematically keeps the surface greased and slightly stimulated will benefit. It is immaterial what grease is used—olive oil or elder-flower ointment is as good as any. In the horny forms of disease, a clear surface may be very readily obtained by careful soaking with glycerine, by poulticing or fomenting. The best plan is to use an alkaline bath, and, if the disease be too extensive, a warm alkaline (potash ℥ss to ℥viij) lotion, to soften up the masses. After the scales are removed in the manner just indicated, the whole surface can be greased and an alkaline bath used twice a week, containing ℥ij to ℥vj of carbonate of soda and bran to the usual quantity of water, the surface being freely oiled after each bath. In this way the disease may be controlled so as to prevent it being not only a disfigurement but a discomfort, save that it requires occasional attention in winter, lest it become inflamed by cold.

III. HYPERTROPHIC DISEASES OF THE CORIUM.

Under this head are included all those diseases in which the fibrous tissue of the skin is in excess, and in which the disease extends to or involves the subjacent cellular tissue. These may be termed *fibro-cellular hyperplasiæ.* They are (1) morphœa; (2) scleroderma; (3) keloid; (4) fibroma; (5) bucnemia tropica; and (6) dermatolysis. Some writers group one or two of these diseases with new formations, but in truth they are rather characterized by alterations in the quantity and quality of the pre-existing fibro-cellular elements of the skin than the formation of new kinds of tissue.

MORPHŒA.

Use and Relation of the term Morphœa.—Morphœa signifies form. It is in reality the same disease as that described by Dr. Addison as keloid—as, in fact, "Addison's keloid"—a disease wholly different from the keloid of Alibert. It is most unfortunate that Dr. Addison should have employed the term keloid to describe it, and that certain writers should have continued to the present time to designate it as "Addison's" keloid. The term "keloid" is now appropriated by general consent to signify, in accordance with the original use to which it was put by Alibert, a fibrous outgrowth of the skin. As it is impossible, however, to apply the term morphœa to two diseases of a totally different kind, the innovation of Addison must certainly give way to the priority of Alibert. The term morphœa, therefore, as used by Mr. Erasmus Wilson, for the disease about to be described, is much the best.

Morphœa occurs in connexion with as a phase of scleroderma, or it may exist as the sole disease. It involves the whole thickness of the skin in all its parts. The disease occurs generally in non-elevated patches, varying in size from half-a-crown to several inches, which are originally red, but quickly become white, hard, dense, with a polished aspect, and an anæsthetic centre. The patches are edged round with a network of vessels in the form of a lilac ring. The disease is not an outgrowth, not mere discoloration, but caused by a deposit in the skin of a substance like lard, which presses on and obliterates the vessels, hairs, glands, and nerves. When it is very white it is called morphœa alba; sometimes pigment is deposited, and then it is termed morphœa nigra. The whiteness is, however, generally very decided; the patches look waxy, or like alabaster. Though there is no elevation of the skin as a rule, it is evidently thickened by the dense white deposit. The deposit is followed by considerable condensation. The epidermis is horny and sometimes yellowish, rarely desquamating. Once seen the disease is never forgotten. In some cases the deposit of material is not so marked as in others, but there is atrophy together with condensation; still, however, the erythematous circle. This has been called *morphœa atrophica.* The skin is not polished, but white, dry, shrunken, parchment-like, anæsthetic, and hairless, but this atrophied state may result secondarily from the absorption of pre-existing deposit of good amount, and then in some cases a certain amount of deformity may be produced about the face, where the deposit is extensive, the eye being drawn down perhaps. This might be termed scleriasis.

Of twenty-five cases of morphœa collected by Wilson, "ten were atrophic, seven tuberous, five mixed, three melasmic;" eleven were unilateral, fourteen bilateral; the trunk of the body was affected in eleven, the legs and thighs in seven, the arms in six, and the sub-mammary region in three. When morphœa occurs on the forehead it takes the course of the supra-orbital nerve. In one case I saw separate grooves—the one in which I could lodge my little finger, the other a piece of ordinary stick pencil an inch long—were formed; the edges of the spots were red, the centres sunk, white, dense, and insensible.

In morphœa, as ordinarily seen, there may be only one patch or several. In a case recently under my observation the whole trunk was marked by large patches that look at a distance like large wheals with their centres white and circumferences red, but these patches felt firm and were constant, and not itchy, so that their true nature was at once seen on careful inspection. The disease began by slightly red spots, the centre of which presently levelled down a little below the ordinary surface, then became white from the presence of the commencing deposit, the lilac ring gradually widening out in all directions as the latter augments. The seats of the patches of morphœa are, in order of frequency: the back of the neck, the upper part of the chest, the mammary region, the abdomen, the upper part of the thigh and the arm, the forehead, and the cheeks. Morphœa is mostly unilateral; it occurs in females especially, and such as are of weak constitution; and, it is said, oftentimes in pregnant women. It is very chronic and disappears slowly, after having lasted, it may be, a good many years. I have seen it associated with changes in the mucous membrane of the inside of the lips, of the same character as that in the skin, the surface being white, shining, feeling indurated, and looking as if infiltrated with bacony fat.

Relation to Scleroderma.—It is important to observe that in England the morphœa is observed as the early stage of scleroderma (which will be described next in order), not always, but not infrequently. Some think that morphœa is in reality a circumscribed scleroderma, or scleriasis, as it is sometimes called. But as it occurs apparently as an independent affection, I have dealt with it separately.

Nature of the Disease.—Morphœa is held to be a fibroid degeneration, involving the whole thickness of the skin; but more information is needed on this point, and specimens taken from the affected would be especially interesting objects for microscopic studies.

Diagnosis.—The following have to be distinguished from morphœa: (1) In the first place, leucoderma, which is merely white skin, resulting from deficiency of pigment in a particular spot or spots, *without any textural alteration* whatever. If the colour only be attended to, and the deposit feature be overlooked, error is likely to occur. (2) Secondly, keloid; but this is an actual outgrowth of contractile fibro-cellular tissue, in which the elastic elements are unusually abundant; and (3) Thirdly, the early eruptive phase of leprosy, as seen in the anæsthetic form. In regard to this latter point, it may be observed that in leprosy certain anæsthetic patches with depressed centres, and it may be vascular edges, arising out of erythematous rednesses, or after bullæ or brown discolorations, are present, as described so admirably by Dr. Vandyke Carter. These discoloured anæsthetic patches have been called morphœa, and the question arises whether these patches and true morphœa are one and the same in nature. It is probable that there is only similarity, not identity, between the two; in each case there is a new deposit that destroys the skin and alters the pigmentation, atrophy following; but in leprosy one does not see the white waxy deposit from the outset, and as the whole disease, but clearly a new deposit of different character, accompanied by evidence of general nutritive disorder, involving especially the nerve trunks. The morphœa I have been speaking of is a local affair entirely.

The treatment consists in not irritating the local disease, and in adopting a general tonic plan of treatment, under which régime the disease will eventually get well or be arrested, but leave behind perhaps some atrophy.

I have next to consider a disease which is sometimes found in association with the morphœa just described, viz. :—

SCLERODERMA.

In the year 1854 Thirial first drew attention to this disease in a paper entitled *Du Sclerème chez les adultes.* The subsequent names given it have been scleroderma (Kretschmar, *Schmidt's Jahrb.*, vol. cxxvi.); scleriasis; hide-bound disease; scleroma, &c. Scleroderma seems to be the best, as it implies hardened skin, whereas scleriasis signifies rather the act or process of hardening.

Typical Characters.—These are readily given. At first there is stiffness in a part whose movements are thereby somewhat interfered with—ex., in the nape of the neck, where the disease frequently begins. Hardness or horny induration in lines or bands then ensues, but there is no pitting of the part on pressure. But the stiffness and induration may come on suddenly over a large area, from groin to knee, for instance, or the whole front of the chest, and subsequently extend in bands or raised lines to a greater or less distance. The skin cannot be pinched up, and it is more or less immovable over the subjacent parts. The bands or plates of induration may run down the whole back or along the entire length of a thigh or an arm. The diseased surface is yellowish or waxy-looking, and the hue fades away in colour through a dull white into that of the surrounding healthy integuments. There may be a partial boundary line of vessels at the edge of the disease. The deposit or growth condenses and then contracts somewhat, the skin becoming dryer, denser, more parchment-like, whilst there is much deformity produced, especially about the face and joints, when these are the seats of the disease. Respiration may be hindered from the same cause, or the elbow permanently flexed, or the eyes drawn down. Sensation is not at first but only subsequently impaired. Several parts of the body are successively affected. Females are attacked more than males. There are sometimes one or more patches of morphœa present in addition, or the edges of the band or the indurated area may present the aspect of morphœa, being of a whitish hue, though raised. Scleroderma, when in bands or ridges, is distinctly raised. One writer remarks that "the appearance is not that of a tumour, but rather as if the arm had been burnt and had left a leather-like hardness, which required surgical operation as after a burn to remove it; or it seems as if a bad erysipelas had become turned into cartilage and bone." (*Lancet*, 1855). The induration in this disease oftentimes after some time disappears.

In newly-born children the disease sometimes occurs in the badly-nourished, and shows itself within the first few weeks and months of life, being preceded by a certain amount of hyperæmia perhaps, which is succeeded by the usual hardness and thickening.

It will be apparent to the reader that the so-called cases of morphœa of the face—which commences by white alabaster patches, gradually increasing in size so as to cover a large portion of the side, perhaps, and which by the contraction or atrophy of the deposit produces deformity—may be regarded really as cases of scleroderma, and, indeed, as forming a transitional stage between morphœa and scleroderma. This identity in nature is shown by the assumption, as I have above stated, by the edge of sclerodermic patches or bands, of the features of morphœa. It might be advisable, perhaps, presently—if further evidence should bear out this relationship—to absorb morphœa into scleroderma, and to make two phases *circumscribed* and *diffused* scleroderma.

Morbid Anatomy and Nature of Scleroderma.—The disease is supposed to be "fibroid hypertrophy of the skin." Observers generally agree in regard to the minute appearance seen in carefully prepared sections of sclerodermic skin. I have recently had an opportunity of fully investigating the changes in the diseased skin, and now proceed to state what they are. The general aspect of the skin is that of a tough, whitish, fibrous, and somewhat shining mass, studded over, it may be, here and there with minute yellowish points, probably masses of elastic tissue, but generally of a coarse fibrous appearance. The skin feels tough to the finger and offers much resistance to the knife, being in fact like a piece of toughish leather. On section the cuticle is found to be normal, except that there is more pigment than usual in the rete, and in certain cases the rete cells are increased in amount. In certain parts the papillary layer is not altered, but in others the papillæ are flattened out and more or less indistinct. The distinction between corium and subjacent cellular tissue is lost, and the fibro-cellular structures of the corium and subjacent cellular tissue are greatly hypertrophied and condensed into a felt-like mass composed of thick bundles of fibrous tissue, with abundant elastic fibres intermingled and small collections of cell-growths here and there. There does not appear to be much change in the capillaries or the nerves, as far as I can see. The fat is more or less atrophied. The hair follicles appeared in one case to be atrophied and more or less obliterated. I find the muscular fibres of the skin to be hypertrophied and the sweat glands particularly so, although the hair follicles seem to be atrophied. I find, in fact, that I am in complete accord with Neumann on the subject.* The changes above described are fairly represented in the subjoined figure (fig. 38), which represents the appearances presented in a section of sclerodermic skin which I recently examined.

Recently Dr. Rasmussen† has written an admirable essay upon the subject, and in the post-mortem of one case affecting the chest he found the epidermis thick, and beneath it a dense whitish fibrous substance, extending down in some places to the ribs; the glandular tissue of the left breast and some of the intercostal muscles were replaced by fibrous tissue. The pleura costalis opposite the locality of the changed skin, the diaphragm, and the capsule of the liver, were indurated in little tubercular masses. On microscopic examination, the epidermis was found to be of the ordinary thickness, the papillæ normal, the corium rather broader than normal, the connective tissue below much hypertrophied, and studded with spindle-shaped cells; the small arteries were surrounded by closely aggregated cells, like lymph corpuscles—the peripheral oblong, the outermost spindle-shaped and separated by a homogeneous or slightly fibrillating membrane. Indeed, the vessels were en-

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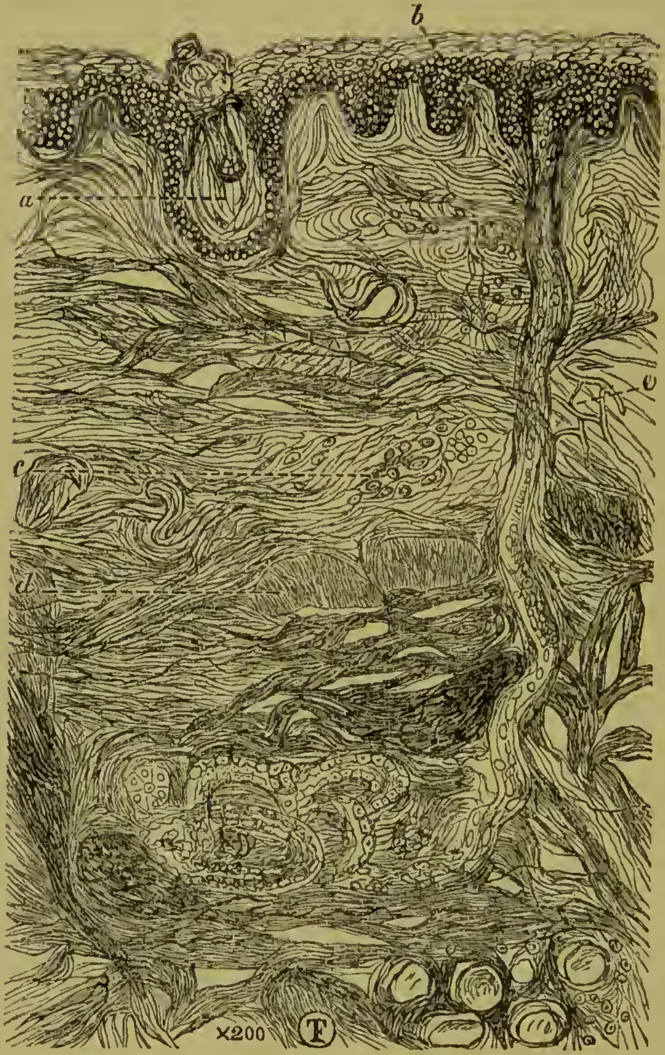
* See Beitrag zur Kenntniss der Sklerodermie. Wiener Medizinische Presse, 1871.

† See Edinburgh Medical Journal, 1867.

Fig. 38.



The general fibrous structure of the section, made up of interlacing bundles of connective tissue, is well seen. At *a* is an atrophied hair follicle; at *b* a sweat duct leading down to the coiled and enlarged sweat gland; at c cell infiltration; at *d* cut-muscular fibres; *e* elastic fibres, represented also by the wavy dark lines running transversely over the field.

sheathed in this lymphatic tissue. The hair ducts and nerves appeared to be unchanged.

It is clear that the seat of the disease is the connective tissue and the corium. The disease, too, is an hyperplasia of the areolar tissue, invading the normal structures, and gradually obliterating them—ex., papillæ, nerves, vessels, hair-sacs, &c. But some authors find the papillæ more involved than others, and the elastic tissue more abundant.

But what is the origin of the hyperplasia? Rasmussen thinks the disease commences by infiltration from the lymphatic vessels (lymphatic œdema of Virchow) into the connective tissue, the hardness being produced by the free development of cells in the fluid effused. This second stage, he thinks, is the only one generally mentioned, the first, or erysipelatous inflammation of the lymphatics, being overlooked.

Rasmussen declares that the changes in scleroderma are the same in kind as those seen in the bucnemia tropica, or elephantiasis arabum, and he thinks the seat of the disease is in the lymphatic system. The small arteries are surrounded by a sheath of lymphatic vessels, which furnish the lymph out of which cells are formed in the connective tissue at a very prodigious rate. He has accordingly proposed to call the disease elephantiasis sclerosa.

The cause of scleroderma is not understood.

The *Diagnosis* offers no difficulty; the indurated, hard, tense, contractile bands are sufficiently distinct.

Treatment is not promising. The opportunities of seeing scleroderma are so few that no definite principle of treatment is laid down: the preparations of iodine with iron, cod-liver oil, nitric acid in large doses, change of air, chalybeate baths, and inunction with black oxide of copper, gr. ij ad ℥j (Rasmussen), are the remedies most usually employed.

In regard to morphœa, tonics, especially the mineral acids and iron, by improving the health, help its removal, and as the general condition improves so does the local.

RHINOSCLEROMA.*

Hebra has described in the *Wiener Medizinische Wochenschrift,* January, 1870, a peculiar new formation about the nose, which he has named Rhinoscleroma, and I quote his article in detail here because Neumann and others rank this disease with scleroderma. Hebra says:—

> "To form an idea of it, a substantial syphilitic sclerosis of the prepuce, *in optima forma*, may in imagination be transplanted to the external nasal structures, in one case even to the alæ nasi, and in another to the nasal ridge; to the mucous surfaces which form the borders of the nasal cavity; or, lastly, to the skin of the parts surrounding the nose, as the upper lip, skin, forehead. Among the nine

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* From the American Journal of Syphilography and Dermatology, April, 1870.

observed cases there were only two which presented the disease on the nose, cheek, and forehead simultaneously; in the others it was confined to the nose and upper lip alone. As a flat swelling, it projected as much as 1½ lines in some places, its extent being always limited by a sharp border, with steep edges. The colour of this new formation varied from normal skin colour to a dark reddish brown. The upper surface of the diseased places was always smooth, rarely shining. The most striking objective symptom consisted in the extraordinarily complete induration of the affected places, which had an almost ivory-like feel. Besides this, the patients experienced but little pain, and usually only when the formation presented itself localized on the inner surfaces of the nose, and when these prominences were pressed.

"In all cases the development progressed very slowly, requiring several years before the trouble had acquired dimensions which obliged the patient to seek medical aid."

The following are characteristics, according to Hebra, common to all forms of the disease:—

"1. In their constant seat on the nose, and sometimes also in its immediate vicinity.

"2. In the extraordinary induration of the affected parts.

"3. In the exceedingly slow development of the pathological product, which appears either in the form of dark, brownish-red tubercles or knuckles, or as induration of the normal appearing tissue.

"4. In the sharp margination of these indurations, and the absence of all œdema or inflammatory symptoms in the vicinity.

"5. In the absence of all apparent metamorphosis of the new formation, as it neither degenerates, ulcerates, softens, nor is absorbed.

"6. In the failure of all internal treatment, even with the strongest agents.

"7. In the absence of all danger to the system at large, even in case of its existence for many years.

"8. Lastly, in the insensibility and painlessness, when the diseased parts are left untouched; severe pain, on the contrary, when the dark red tubercles are pressed."

Hebra adds:—

"As the localization of the trouble in the face in eight out of the nine cases rendered it impracticable to remove even small particles of the new formation with scissors, we had to defer the microscopical examination until the acquisition of an appropriate case.

"When, at length, such an one presented itself, the apex of the isolated tubercle was removed, and carefully examined by my assistant, Dr. Moriz Kohn; he found the epidermis and the layer of the rete Malpighii of normal appearance. Between the elements of the latter especially there were no abnormal occurrences.

"The papillæ were somewhat longer than usual, conical or knobby; their external connective-tissue structure markedly wasted; the connective tissue of their body only present as a network of delicate fibres and small intervals; their blood-vessels scarce and thin. The connective tissue of the vascular stratum also present only as a pale, thin, delicate network of fibres. This network of the vascular layer and of the papillæ was filled with small cells, crowded closely together, and the infiltration of cells, at different places extended down deep into the corium, was, however, found regular, and close only in the vascular stratum and in the papillæ, which latter especially appeared stuffed with cells. The cells were smaller, especially in the protoplasma, than the granulation-cells as a rule are, as we meet them in acutely or chronically inflamed tissues, and in places where the formation of new connective tissue is in progress. The nuclei of the cells were small, little refractive, and finely granulated.

"The cells appeared simply stored away in the delicate connective-tissue structure of the papillæ, and the upper layers of the corium, and by agitation were easily displaced.

"The deeper layers of the corium showed a close connective-tissue arrangement, which had remained more free from the described formative element. The layer of fat-cells normal. Only spare cells in the fibres of the connective-tissue net here present, and there principally in the vicinity of the vessels.

"Sebaceous and sudoriferous glands could not be found in the sections examined. The hair-bulbs, external and inner root-sheath of the hair, were free from all foreign formative elements, while the papillæ bordering on the hair follicle appeared crowded full of the above-described cells.

"The above described sclerosis of the skin is, therefore, by this explanation, a cell-infiltration of the upper layers of the corium and the whole papillary body. The normal structure of the affected tissues has thus far suffered by the massively accumulated new formative elements, so that the connective-tissue structure of the papillæ, and of the upper part of the corium, is forcibly separated and crowded out, and its elements are renewed.

"The cells of the new formation nowhere exhibited that pale, dusted (finely granulated), indistinctly nucleated, not sharply contoured appearance (so-called degeneration) of the cells in syphilis and lupus; but they appeared well preserved, with sharp contour and distinct nucleus, and imbibed carmine well.

"We believe, on the strength of the above microscopical characters, which certainly made the clinical facts in the character and course of the new formation intelligible, though only imperfectly explainable, that this rhinoscleroma may be placed histologically next to the glio-sarcoma or granulation-sarcoma (Virchow, Billroth).

"In conclusion, I may be allowed to state something regarding treatment, hitherto of but little avail. In two cases, where the tubercles projected from the inner surfaces of the nostrils into the nasal cavity, and effectually prevented the ingress of air, I have destroyed the tubercles with caustic potassa in substance, and, after separation of the slough, have produced cicatrization by a frequent coating with concentrated solution of nitrate of silver (aa. p. aeq.). Compressed sponge introduced was effectual in preventing contraction of the cicatrix, and thus the perviousness of the nasal entrance, and the possibility of unimpeded ingress and egress of air, was maintained. It is of importance to observe that after destruction of the new formation with caustic potassa no regeneration took place, as this is observed in other formations, as for instance, epithelioma, and also that the neighbouring morbid product was neither disposed by the induced action to retrograde metamorphosis nor to more rapid development."

KELOID.

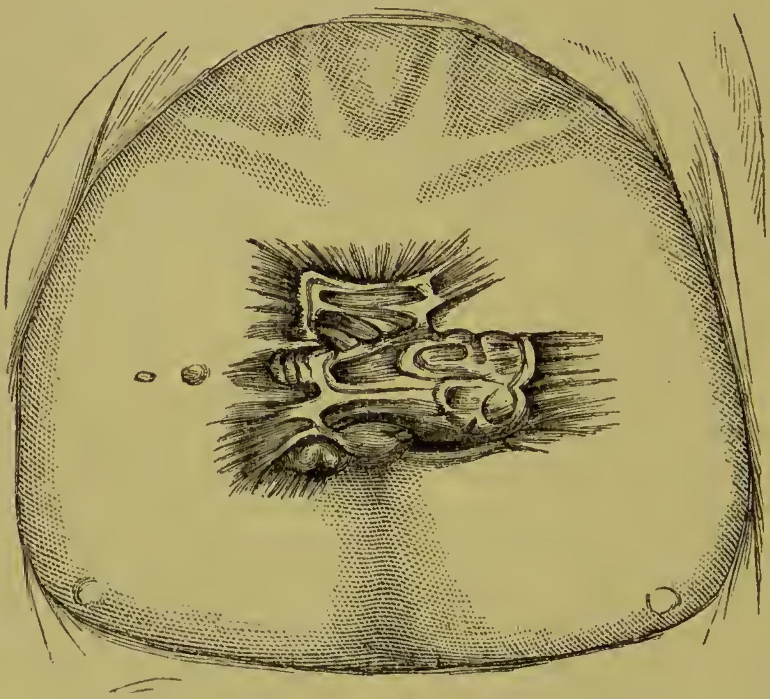
This disease is another hypertrophic growth of the fibrous tissue of the surface. The characters of the disease are very well defined, and it is not very liable to be confounded with any other affections. It must be distinguished carefully from scleroderma and morphœa on the one hand, and fibroma on the other. So-called Addison's keloid is the morphœa before described. I am now dealing with Alibert's keloid—with keloid, in fact.

It is usual to describe two forms, the true or idiopathic; and the false or traumatic keloid, or the keloid of cicatrices.

In true keloid, or kelis, as it is occasionally termed, but more properly idiopathic keloid, the seat of the disease is the corium itself, the morbid change consisting in hypertrophy of the white fibrous tissue of this part, forming a distinct, raised, well-defined tumour; this tumour is at first pale, and then becomes pinkish and shiny, and oval in shape, and it presently sends out, as it were, offshoots of fibrous tissue like the claws of a crab into the surrounding parts, and these contract and produce distortion; but the tumour or tumours if several (for there may be one or several), may remain in the form of flat, pale, or red, or sand-coloured elevations, the size of split peas or small nuts, for a long time. When the contraction sets in there are often much pain and itching, and when the disease is fully established it looks like an hypertrophous growth of the tissue of an ordinary scar, but somewhat redder. If the growth be small it may look like a very unripe black grape. The term keloid was given the disease from the resemblance of the circumferential outshoots or fibrous bands to the claws of a crab. The sensibility is blunted over the tumours, but there is no anæsthesia. There need be no pain in the tumour during its whole existence. Deformity is produced by the contraction of the tissue of the keloid tumour. Kelis does not ulcerate, is unaccompanied by enlargement of the glands, and is not destructive to life. The general characters of idiopathic keloid I have attempted to represent by light and shade, in fig 39, which gives a very good idea of the disease, except its colour.

The traumatic keloid, or keloid of cicatrices, springs up as an hypertrophic growth of cicatricial tissue, and follows the healing of wounds of all kinds, as after flogging, burns, boils, scars left by rupia, severe acne, the application of acid, syphilitic and scrofulous ulcerations, the piercing of ears for ear-rings (particularly in the negro), &c. The keloid of cicatrices usually begins as "very hard, small, shining, tubercular-looking elevations, of a roundish or oval shape, somewhat firmly set, of a dusky or deep red colour, and generally attended with itching and pricking, shooting or dragging pain in the part" which is the seat of a scar. These tubercles increase in size and grow pale, flatten out, and become depressed in their centre, which is marked by white traversing lines or bands, and a few straggling vessels. The increase takes place by means of offshooting claw-like processes, which run away from the edge of the tumour, and are from half a line to a line broad by 1¼ to 1 inch

Fig. 39.



A sketch after a cast in the Dermatological Collection at the College of Surgeons, showing in the centre the raised main fibrous outgrowth, with the claw-like processes at the edges.

long; the growth is slow, and affects the whole area of the burn or scald, the site of which, in fact, becomes hard, leathery, and raised.

Prof. Longmore, describing a case in which keloid occurred after flogging, says: "A small round tubercle appeared, which became a flat mass nearly as large as a man's hand, without pain; there was some irritability, and it was tender where pressed upon by the cross-belt and the weight of the knapsack: on the front of the chest several small tumours, evidently of the same nature, were observed." The final result is admirably described in a case of keloid following a burn, under Mr. Curling's care, as follows:—"The whole seat of the burn has assumed a keloid state; it is thick, bossy, indurated, looking remarkably as if very luxuriant and elevated granulations had healed over, and then, instead of shrinking, had undergone consolidation and some increase." As Mr. Wilson puts it, "false kelis appears to be the joint result of hypertrophy, condensation, and concentration of the white fibrous tissue of the skin, and by a special power of contraction would seem to draw the rest of the cicatrix to itself, and produce a puckering of the adjacent surface." In fact, the keloid of cicatrices is but the hypertrophied fibrous tissue of the scar contracting freely, especially at the edge.

Morbid Anatomy.—In keloid the disease consists in hypertrophy of the white fibrous tissue of corium with cell proliferation along the vessels. The growth is made up of closely-packed fibres with many nuclei, but few vessels. The fibres of the areolar tissue do not "constitute curly bundles, but thick trunks, the firmly compressed fibres of which run at first in an almost straight direction, gradually separate from one another, and finally fall into several distinct bundles, which, vibrating in curls, after repeated subdivisions, are at last in nothing distinguishable from normal areolar tissue:" the trunks being closely compressed and interlacing, or, as Neumann remarks, the connective-tissue bands are deposited into wedges in the substance of the corium, and completely supplant it, as represented in the subjoined figure (fig. 40.)

The disease is supposed to begin by cell infiltration about the vessels of the corium, the change in the adventitia being marked especially at the edge of the growth, and at the part at which the arteries send offshoots into the papillæ; the cells are in the first instance spindle-shaped and collect by-and-by into distinct bundles of fibres.

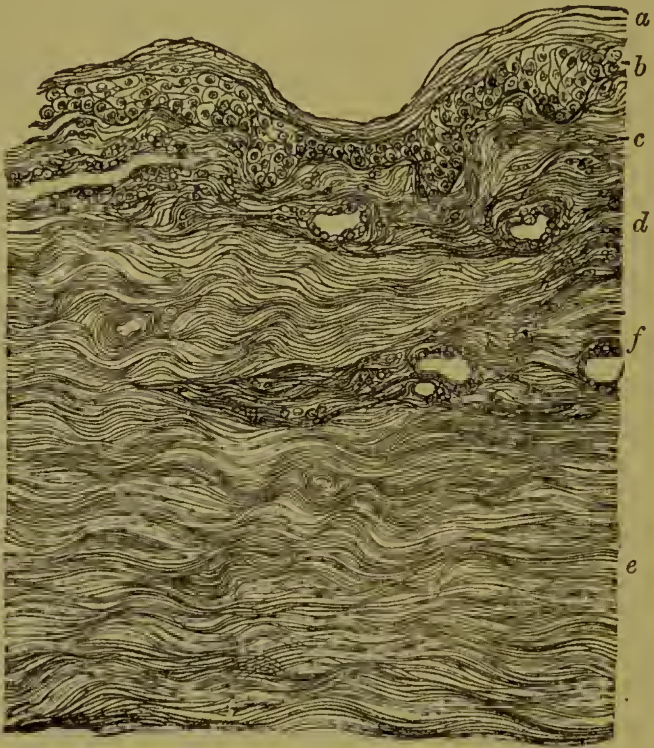
My friend, Dr. Duhring of Philadelphia, made a careful examination of the tumour in a case of traumatic keloid and reported as follows:—

"To the naked eye, upon section vertically through the tumour, the cut surface presented a structure close and compact in appearance, of a yellowish-white colour. To the touch it was tough, resisting, and firm, with a certain amount of elasticity, and upon pressure exuded a thin, pale, straw-coloured liquid. After being prepared in solution of bichromate of potassa and alcohol, vertical sections were made and examined in glycerine. The horny layer of the epidermis was thin and scanty, the cells themselves being well broken up, and many of them having undergone granular degeneration. The cells in the upper layer of the rete mucosum seemed closely packed together and unusually numerous, while the deep layer contained the pigment cells well coloured.

"The mass of the tumour was composed principally of connective and elastic tissues, the former being disseminated throughout, while the latter appeared here and there in the form of good-sized, well-developed elastic bands, running both transversely and vertically. Fat was found in some parts in fine globules. Long, wavy bundles of connective tissue were seen running in striæ transversely, just beneath the papillary layer. Here and there a cut sebaceous gland was found.

"In some of the fields a loose network of connective and elastic tissue intermingled was present, with globules of fat. Connective-tissue cells, long and twisted, were to be seen, sometimes approximating each other and again scattered."

FIG. 40.



(After Neumann).

a. Epidermis. *b.* Rete Malpighii. *c.* Tissue of the cutis. *d.* Remains of the cutis. *e.* Dense fibrous tissue of the keloid. *f.* Cell infiltration around the adventitia.

There does not appear to be any appreciable difference between the minute characters of idiopathic and traumatic keloid formations.

Diagnosis.—The elevated tuberculous tumour, with the claw-like processes, the puckered state of the skin, the absence of ill-health, of glandular enlargement and ulceration, are diagnostic. The false keloid of cicatrices and true keloid, or kelis, only differ in the fact that one is idiopathic and the other secondary to cicatrization following lesions of the skin. Some observers have noticed yellowish points at the apices of the tubercles—a commencing fatty change.

The *Treatment* of keloid consists in improving the general health, and preventing the irritation of the tumours. Locally, the use of steady and continued pressure, iodine frictions, the passage of electric currents through the tumour, and iodide of lead ointment has been recommended; but I do not know of any better plan than the continuous application of contractile collodion to the tumours, to which the hypodermic solution of morphia may be likewise applied for the relief of pain. It is useless, it seems, to remove the tumour by caustics or the knife. Dumreicker however is said to have succeeded in removing a keloid of the lip by the application of an ointment made of acetate of lead ʒj, alum ʒss, and an ounce of lard.

FIBROMA.

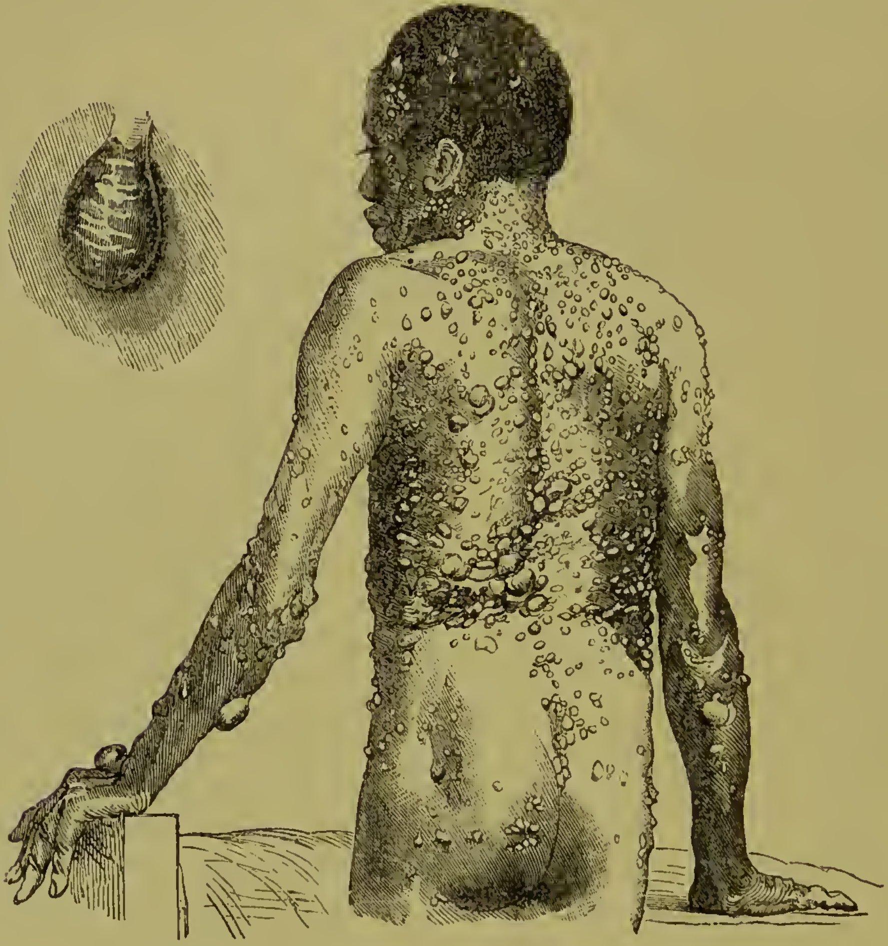
This is called by some writers fibroma molluscum or molluscum fibrosum.

General Characters.—The disease in its usual form is characterized by the formation of outgrowths of fibrous tissue covered by integument of ordinary appearance, which outgrowths form distinct pendulous tumours; the disease is, in fact, polypus of the skin. But I have observed a special form of fibroma, in which the disease consists of the same tumours, but of greater size, whilst the tumours grow very rapidly, ulcerate and become very vascular—in fact, after a while they take on a fungating character. I purpose therefore to make two forms (*not varieties*), *fibroma simplex* and *fibroma fungoides.*

Fibroma Simplex.—In the early stage there is a softish tubercle, or there are several tubercles of the same colour and consistence as the natural skin; it, or they, may be sessile, but soon get pedunculated, and then gradually increase in size. They are flabby, generally more or less pedunculated. These tumours vary in size from that of a pea to that of a large fig and more. Sometimes the tumours are sessile. These fibromata are soft to the feel, and, as before observed, have the aspect of ordinary integument, but they are at times corrugated. The neck, chest, back, and more rarely the limbs, are the special seats of these tumours, which occur in elderly people usually. Mr. Wilson accurately describes the feel of these fibromata when he says that "taken between the fingers they often give the idea of a loose bag of integument, the looseness of the contained areolar tissue permitting of the inner walls being rolled the one upon the other." These tumours are now and then flattened from the pressure exerted by the clothes. There is no contractility about the growths as in keloid. The palms of the hands and the soles of the feet are almost always free from the disease. The accompanying representation (fig. 41) taken from a photograph sent me by my friend, Dr. Izett Anderson, of Jamaica, gives a good idea of the varying size of the tumours and the extensive way in which they may be sometimes distributed over the body. The little tumours look, in the illustration, like those of keloid, but they are to the feel soft, flaccid, and flabby, and unlike the hard dense tumours of keloid. I have had sketched a small solitary tumour (life size) separately in the illustration.

Professor Ebert records the case of a man in whom there were 107 tumours. I saw a case of Hebra's, at Vienna, in which the whole body was covered by them (of all sizes); one was nearly as large as a fist. The disease occurs in elderly people, and is not attended with any special danger.

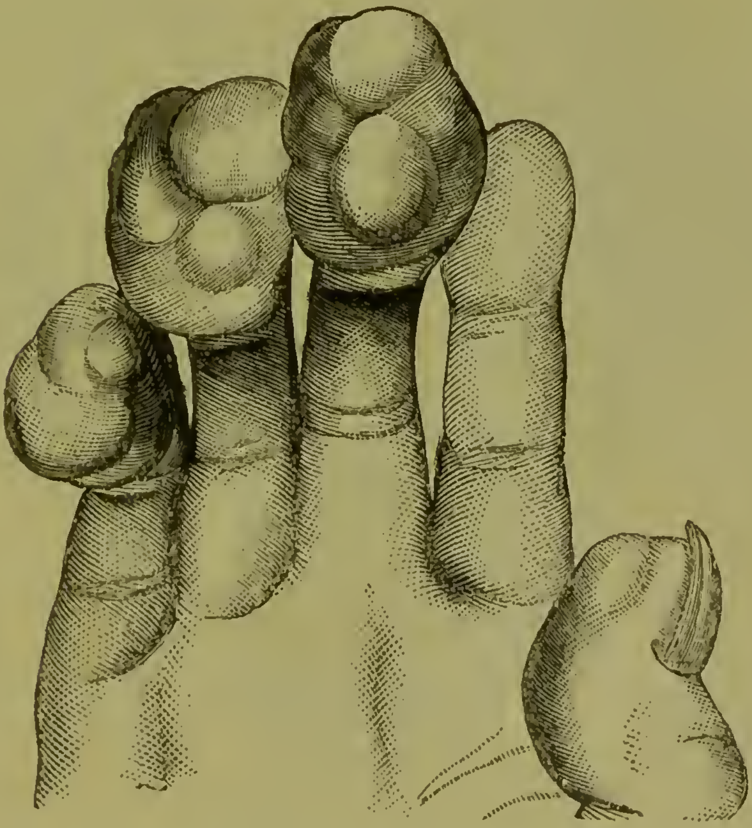
Fig. 41.



Fibroma Fungoides.—Perhaps the best mode of illustrating this form of disease will be by relating the particulars of the last four cases which have come under my notice. This phase differs mainly from the other just described—viz., fibroma simplex (ordinary fibroma molluscum)—by the tendency to ulcerate, to rapid growth, and to vascularity. The tumours are, before ulceration, in aspect and feel like those of the simple variety, but when ulceration sets in, if in the young, they exhibit at the ulcerated part a pultaceous-looking surface, and in the old, as far as I have seen (in two cases), a livid red, apparently very vascular ulcerating surface, from whence issues a fœtid ichor. In the first of my four cases there was a round raised tumour, as much as possible like a Normandy pippin in size and form and aspect, perhaps a little redder, seated on the scalp of a gentleman. This tumour had slightly ulcerated. The second case was that of a patient sent me by Dr. Evan Jones, of Aberdare, who had over her body several huge sessile tumours, giving the aspect of normal integument at the base, but like masses of raw dried beefsteak over the upper area. The masses were the seat of intolerable itching. There were smaller tumours, more like ordinary fibromatous masses, about the body. On the breast there was one tumour as big as a large fist. It could be readily moved upon the adjacent parts, and rapidly ulcerated, exhibiting a foul, livid, red, fungating surface, which was specially offensive.

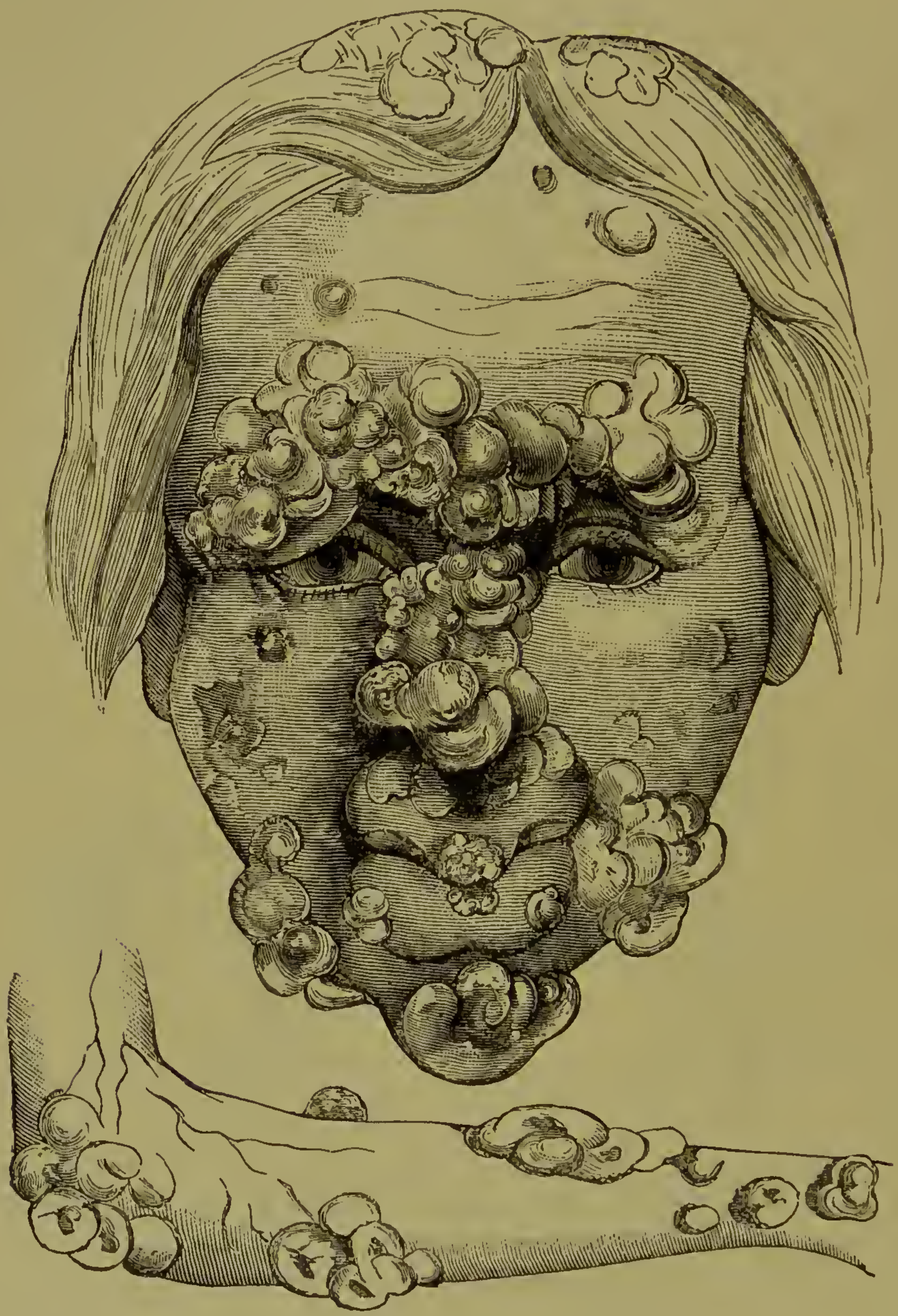
Case 3 was that of a child in the Children's Hospital, which Dr. West very kindly asked me to see. This was a remarkable case. The child was of young age, and was semi-idiotic. There were small fibromatous masses about the ears, especially the concha, and a large tumour at the back of the head, just ulcerating, but save at the ulcerated spot having the look and feel of lax integument. The fingers (see fig. 42) were markedly club-shaped, and this was produced by the development of fleshy masses resembling a half-ripe black grape seated at their tops on the palmar aspect, imbedded as it were in the fleshy end. This gave the child a very odd appearance, and I have attempted to represent its chief features as above. But this was not all: the whole of the tissue of the gums was enormously hypertrophied, protruding about and around the

Fig. 42.



teeth so that they were imbedded in it. The disease began with the change in the gums, and one other child in the same family I saw with the same change commencing on the gums: a third being affected with the gum disease also. The fourth case was that of a woman of advanced age, under the care of Dr. Cockle, in the Royal Free Hospital. She appeared to have been suffering from syphilis. There were syphilitic scars and tubercles about her skin, and about or from the seats of these tubercles arose lax-

Fig. 43.



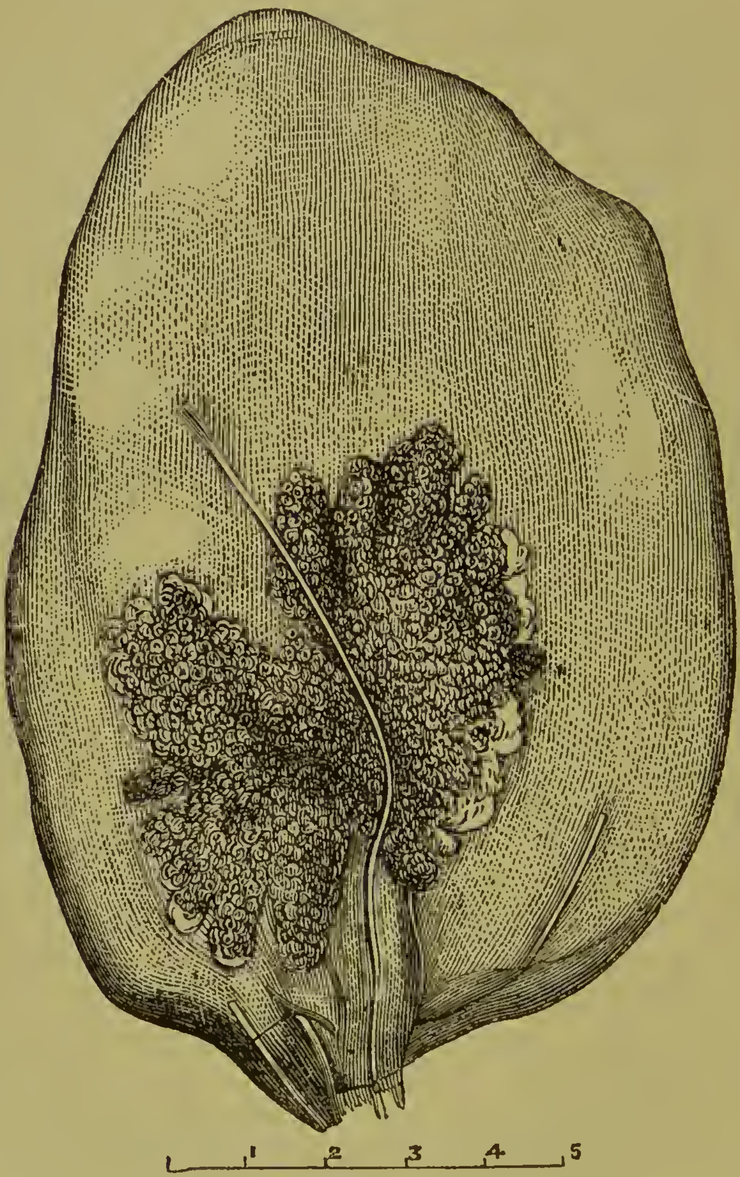
The arm is represented below with sessile tumours, having each a central punctum (the opening of the sebaceous gland ducts).

textured fibromatous masses. Those on the face, being large, luxuriant, and livid red, but of firmish consistence, stood out from the forehead, the nose, and the lips, as much as three-quarters of an inch in depth, causing overhanging eyebrows, enormously thickened alæ nasi, and protuberant lips of great size. On the arm and legs were numbers of sessile fibromas of ordinary appearance, save that they were slightly purple in tint in parts, and some of them exhibited in the centre the opening of a sebaceous duct. Some were the size of a big nut, and others half a walnut. The face and arm are represented in the foregoing illustration (fig. 43), which is only intended to give a general idea of the formations.

In all these four cases the main characters were the same: the production of fibromatous masses made up evidently of fibro-cellular tissue growing rapidly, tending to ulcerate freely, and to become very vascular. The disease in the last case mentioned might with propriety be termed traumatic fibroma. The patient is getting well at the time of writing, under huge doses of iodide of potassium. The disease could not be termed keloid, for the characters of fibroma were fully developed.

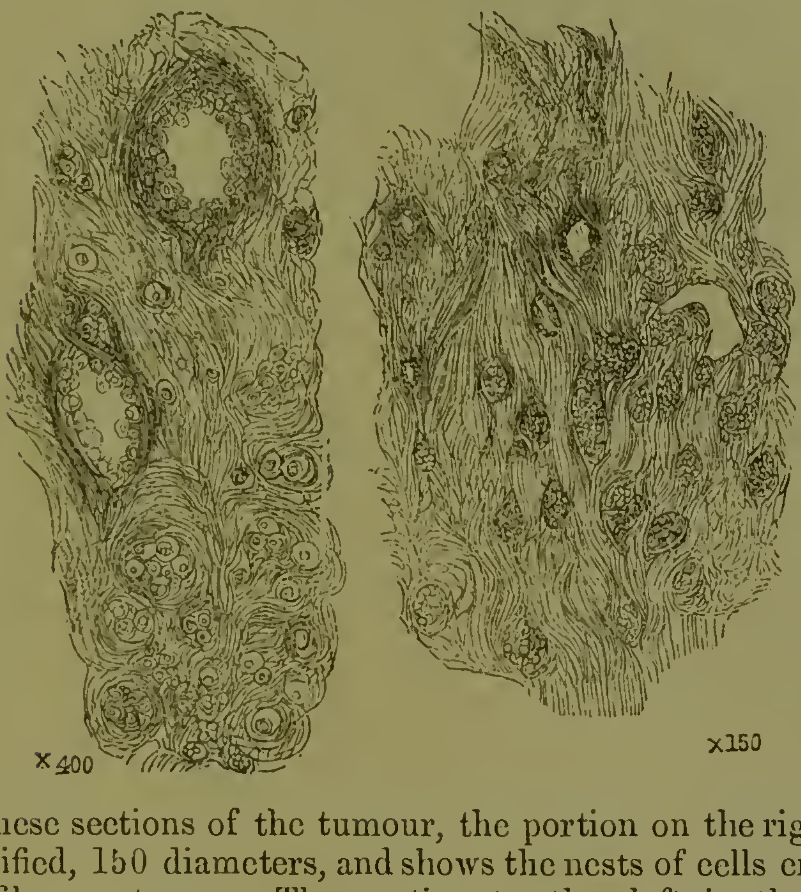
The Pathology of Fibroma.—The disease would seem clearly to be an hypertrophous growth of the fibro-cellular tissue of the skin, especially that part of it which constitutes the dermic layer of the hair follicle, and involving the sebaceous glands more or less. Dr. Beale settled this latter point as long ago as 1855 (*Path. Soc. Trans.*, vol. vi. p. 313). The mass of the growths on section presents a surface with the aspect of fibrillating material enclosing collections of cells. Mr. Howse, of Guy's Hospital, has lately carefully examined the tissue in a case of Dr. Fagge's, and states that "there is not any particular arrangement of this nucleated connective tissue, except that here and there it was disposed in bars across the preparation; these bars were also occasionally seen in transverse sections as circles, looking something like gland tubes or vessels, from which, however, they were readily distinguished by their structure and the absence of any central canal." Dr. Beale concluded that neither the sebaceous glands—which may be involved and destroyed—nor the sweat glands were concerned in the formation of these tumours, but that the cells at the deepest part of the hair follicle and of the follicle itself were principally concerned; and Mr. Howse confirms this, and locates the anatomical seat of the disease in the first instance in the two external layers of the dermic coat of the follicle. Dr. Fagge thinks that the sebaceous glands which are involved in the tumours are hypertrophied (see figure on next page, which represents a solitary tumour, as in fig. 41, more highly magnified. The representation is from the *Med.-Chir. Trans.*). But neither Dr. Beale nor others allow this. Mr. Howse says, that in Dr. Fagge's case the glands were more sacculated than usual, and the acini more separated, but this was due to the growth of tissue between them, dividing them one from another. In the case of the child with the strange fingers, before referred to, Mr. Butlin, the excellent then Registrar of the Children's Hospital, examined the fibromatous tumours seated at the back of the head, which had the ordinary characters of fibroma, very carefully, and was good enough to give me the following description :—" General characters of the tumour: Not encapsuled. Bled freely on removal. It consisted of a tolerably firm jelly-like outer portion, and of a firmer opaque white central portion. There was no appearance of division into lobes. A thin juice could be scraped away from the cut surface, but it was not abundant. This juice gave the ordinary characters of albumen when tested. Microscopic examination of section mounted in glycerine showed a more or less regular network traversing the section in all directions, the meshes of which

Fig. 44.



were filled up by the coagulated albuminous juice. This network was composed, in the firmer portions of the tumour, of bands of well-marked fibrous tissue, often carrying vessels; but in the softer portions of the tumour, merely of numbers of cell-forms, the exact shape of which was somewhat difficult to make out, but they appeared to be generally round or spindle-cells. Cells of various size, and generally round, large, and nucleated, were scattered through the basis substance. Whilst many parts, especially of the softer portion of the tumour, contained nests of cells and nuclei, which were often surrounded by a layer of fibrous tissue, and which reminded one of the ducts of glands filled with cells and cut across." The figure 45 is a sketch which I made of one of these sections of the tumour, the portion on the right hand is magnified, 150 diameters, and shows the nests of cells entangled in the fibrous stroma. The portion to the left is the central part of the representation, more highly magnified to show the intimate relation of cells and fibres. The two large openings are the ducts referred to by Mr. Butlin. I imagine they are the sweat ducts cut across. In the former part of the tumour I found also very few cells, and only fibres with here and there a solitary cell or two. I imagine the tissue around the gland, represented in fig. 44, is the same in character as that represented in fig. 45.

Fig. 45.



Diseases resembling Fibroma.—There are instances of very lax pendulous outgrowths in which the integuments hang in loose folds, and in which the fibro-cellular tissue is increased, which resemble fibroma, except that the growth is not in distinct circumscribed pedunculated tumours. Valentine Mott called this disease *Pachydermatocele* (see below).

The *Diagnosis* must be made in the early stage from sebaceous cysts: in the case of cysts, the origin from a fat gland, the central aperture or entrance to it, and the fatty contents which can be squeezed out, determine the nature of the disease. The hard contractile sessile outgrowths of keloid could not well be mistaken for the lax, flabby, pedunculated tumours of fibroma, which have the aspect of normal integument.

The *Treatment* is simple: when small, fibromata may be removed. In elderly men they are sometimes small, flat, and numerous—especially about the back, over the shoulders, and on the chest. I have never had the least trouble in getting rid of them all by the use of acid nitrate of mercury caustic to the smaller, and the joint use of that remedy and the ligature to the larger ones. I generally, after applying the acid, give an oxide of zinc paste to be used, to prevent too much irritation.

There is yet another form of fibrous hypertrophy, in which greater laxity of tissue is observed. It is called—

DERMATOLYSIS.

In this affection the skin hangs in loose folds. Its fibro-cellular element is greatly increased. The affection really includes all pendulous conditions, from obesity, parturition, the state of skin in lax and enlarged mammæ, and the like. Indeed it includes what Valentine Mott has called pachydermatocele. In the uncomplicated form of disease, the hypertrophic growth arranges itself in layers like the folds of a tippet; there is little vascularity; the sensibility of the part is diminished. Five chief seats of disease are mentioned by Alibert, the eyebrows, the face, the neck, the abdomen, and the labia. Mr. Furneaux Jordan has described what appears to be the same disease, occurring in a collar-like mass around the ankle. I saw at the Orthopædic Hospital, some few years since, under the care of Mr. Adams, an instance of this disease affecting the whole leg, and associated with pendulous folds, lax and soft, on different parts of the body.

ELEPHANTIASIS ARABUM.

Syn. Elephant leg, Bucnemia tropica, Barbadoes leg, Pachydermia; called also by Erasmus Wilson—after Mason Good, and so named in the Museum of the College of Surgeons of England—Spargosis.

Nomenclature.—There is a very unhappy confusion in the use of the term Elephantiasis at the present time. Most Indian officers, when they use the term "Elephantiasis," refer to the elephant leg, whereas in Europe, dermatologists signify thereby true leprosy, or Elephantiasis Græcorum, as distinguished from Elephantiasis Arabum, and the term is so used in the new nomenclature of the Royal College of Physicians. I may ask our Indian brethren not to use the term "Elephantiasis" without qualification, but to append to it the additional term Arabum when the "elephant leg" is meant, and "Græcorum" when true leprosy is signified. Much confusion will be avoided hereby. The use of the term Bucnemia tropica, or "tropical big leg," and when the disease attacks the scrotum, "scrotal tumour," the sarcocele of the Egyptians, would banish all confusion, and is to be commended, so as to get rid of the word elephantiasis altogether. Leprosy being called leprosy.

Description of the Disease.—The disease is to be found probably everywhere, but it is specially prevalent in Cochin China, the West Indies, Egypt, Barbadoes, Malabar, Abyssinia, Polynesia, South America, Japan, and Brazil. The disease usually attacks the lower limbs, and is mostly confined to one of them, but it may affect the scrotum, belly, breast, pudendum, and other parts. It is characterized by hypertrophic growth of the cellular tissue of the skin, giving rise to general enlargement and alteration in the aspect of the skin, so that it becomes tawny, hard, dark, livid, thickened, often scaly, and perhaps fissured, whilst by-and-by warty points appear, so that the skin looks and feels like that of an elephant.

The disease lasts a variable time, possibly a lifetime; attacks all classes, and is non-contagious. The disease is marked therefore, when fully developed, by three features: —(1) Hypertrophic growth of the cellular tissue; (2) alteration in the aspect of the skin; (3) more or less deformity. And these changes are brought about as the result of intermitting and repeated attacks of inflammation of the lymphatics. In well-marked cases the disease is ushered in by distinct febrile symptoms, vomiting and head-ache at times, and it is said even delirium as a rarity: and locally, redness, pain, and tension over the course of the lymphatics, which presently feel knotty and corded—the glands being also swollen and tender. The constitutional symptoms soon vanish—in a few days; but the limb does not resume its natural size; the glands especially remain enlarged. A repetition of fever occurs at uncertain intervals, and after each attack the enlargement of the part affected is permanently greater; and it has been ascertained, from careful observation, that the size of the affected part bears a direct relation to the frequency of the acute attacks of fever and local inflammation. The pain in the first febrile attack is severe, but it is slighter in subsequent ones. During the progress of the disease, deposit and thickening have been going on in the skin and subcutaneous tissue—hence the sensibility of the part is somewhat lowered; but it is not as in the true elephantiasis, annihilated, nor indeed *seriously* lessened. The swelling in the disease may be pretty uniform or partial; sometimes it is enormous, as when the disease attacks the scrotum; then it has been known to produce a pendulous tumour of sixty pounds weight. The skin, as I have said, undergoes a peculiar change; it is tawny, hard, dark, livid, thickened; often scaly and fissured or greyish; presenting warty projections, especially about the joints; the veins are varicose, the surface then closely resembles the skin of an elephant. The subsequent changes are ulceration, with sprouting granulations (fungous), suppuration, and foul discharge. The glands participate in this action. Occasionally the lymphatics become very varicose, and dilated, and the surface is covered over with quasi-vesicles, some of which may reach the size of a pea, but these are seated in the substance of the cutis, and when punctured give out a clear or milkish fluid, which is lymph. This state of things is seen more particularly when the scrotum is affected. It is brought about by the dilatation and hypertrophy of the lymphatic vessels, and the vesicles observed over the surface are the dilated points of the lymph vessels. I had read somewhere of the scrotum being the seat of quasi-abscesses, I imagine brought about by an exaggeration of this state of things.

The disease may carry off the patient by hectic. Frequently its progress becomes stationary, and the patient gets about as best he can with his unsightly deformity. The palms of the hands and the soles of the feet generally escape the disease. In this country a similar condition follows chronic ulcers of the leg; the limb enlarges, and its fibrous element hypertrophies so that it is nearly twice its usual size. The average size of 340 cases, round the ankle, Mr. Waring found to be $11\frac{7}{12}$ inches. Dr. Thebaud successfully removed a scrotal tumour, which reached to within five inches of the ground; it was 28 inches long, 20 inches in its bilateral diameter, its widest circumference 48 inches; and it weighed $63\frac{1}{2}$ lbs. when removed, and the opening of the penis was 18 inches from the surface.

The *Pathology* of the disease appears to be well made out. It is, as shown by actual observation, a hypertrophy of the derma and subcutaneous tissue, with the effusion of a blastema, of homogeneous aspect, mixed up with a large number of molecules, granules, free nuclei, and nucleated cells. The first stage is inflammation of the lymphatics; as a consequence the lymphatics are obstructed, and fail to convey the lymph away, which remains behind in the tissues, and becomes coagulated and more or less appropriated in their hypertrophic increase. The epidermis is more or less affected—thickened; but this varies in many cases. The cutis is thickened, the papillæ are distinct and prominent, the subcutaneous cellular tissue (areolar, fatty, and elastic elements) is present in excess, and infiltrated by the lymph in excess just spoken of. The veins are distended, the lymphatics obliterated; the muscles often pale and fatty. The internal organs also are frequently in a state of fatty degeneration. The lymph, when first effused, is slightly milky, and contains albumen, some fibrine, &c. The primary seat of the disease is the lymphatics. A good paper on the morbid anatomy of the disease has been written by Dr. Vanlair.* This observer points out the purely hyperplastic character of the disease, having carefully examined two limbs in a patient who died with the disease. Dr. Vanlair points out that the layers of the true skin hypertrophy, whilst the panniculus adiposus atrophies progressively, the hypertrophy of the epithelial tissues being secondary to that of the vascular tissues beneath them. He notices that the outset of disease is accompanied by the appearance of lymphatic corpuscles in the cutaneous parenchyma without alteration of the proper tissues of the part. They are specially seen about the base of the papillæ.

Causes.—The disease is not hereditary; it is not contagious. It attacks males more than females. According to Mr. Waring's observations 75 per cent. of cases were males and 25 females. It is most frequent between the ages of twenty-five and fifty. Of 945 cases collected by Mr. Waring, 729 occurred in people whose ages ranged between twenty-six and sixty; 139 between five and twenty-five, and 77 after the age of sixty. In 5·65 per cent. true leprosy was found to be co-existent with the disease.

The date of its first appearance is noted also: it existed since childhood in 16 cases; it appeared before the fifth year, in 7 cases; between six and ten, in 33 cases; between eleven and fifteen, in 111 cases; between sixteen and twenty, in 222 cases. As to the part affected, it was the right leg alone, or with other parts, in 307 cases, or 32 per cent.; the leg alone or with other parts, in 287 cases, or 30 per cent; both limbs, &c., in 344 cases, or 36 per cent.; in other parts alone, in seven cases; in the upper limb in four cases. This agrees with Mr. Day's researches in Cochin China. He found that the disease attacked the lower limb in 93 per cent. In 224 out of 226 cases, in which the point was examined, Mr. Waring found the febrile attack to be *primary*. Europeans are less liable than natives to be affected by the malady. Among the causes usually assigned for the disease are hot climate and malarial emanations, which occupy first rank. Mr. Waring thinks that the character of the water used by the inhabitants has much to do with the disease: "The sea-water, penetrating through the porous sand, renders the water saltish and brackish, and as the generality of these pools are surrounded by trees, it in addition soon becomes loaded with dead vegetable matter, which undergoing decomposition, renders the water dark (almost black), and highly offensive to the taste and smell, which even boiling and filtering fail to deprive of its unwholesomeness." But indeed the cause is not made out.

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* Étude Anatomo-pathologique sur l'Elephantiasis des Arabes: Bulletin de l'Académie Royale de Médecine de Belgique; Séance du 30 Sep., 1871.

Prognosis.—The disease is chronic. Mr. Waring found, in 218 cases, the duration of the disease range between twenty-six and fifty-five years. If the disease is rapid, the febrile paroxysms severe and quickly recurrent, if there be much suppuration, and the general health be indifferent or bad, the prognosis is grave.

Treatment.—In the acute state, venesection has been recommended. I should think quinine in full doses much better: but locally leeches to the lymphatic vessels, fomentations, rest, position, cold lotions may be used. In the chronic state, friction, pressure (continuous), bandaging, blistering; and, internally, iodide of potassium, liquor potassæ, bromide of potassium; and, as a last resort, ligature of the main artery running to the limb or tumour;* pressure, and rest, are called for. Mr. Waring recommends quinine. Dr. Vanzetti has successfully employed compression of the arterial trunk supplying the affected part. Dr. Buchanan explains the action of this procedure thus:—Tying the main artery does not reduce the size of a normal leg, but does that of an elephantiasic one, because the organs of absorption act differently upon normal and abnormal tissues. The activity of absorption, as a general rule, is in inverse ratio of that of circulation. When the force of circulation is weakened, the process of absorption is unusually energetic. This applies particularly to non-malignant deposits; and absorption being once started, will often go on of itself. Thus, when a blister starts the absorption of an old effusion, that absorption will sometimes continue on unaided, and this is why in elephantiasis, after the operation, collateral circulation being soon established, absorption of the morbid material goes on.

I have greatly relieved cases by the judicious combination of diuretics, rest, firm and continuous bandaging, together with mild mercurial friction to the limb. Continuous pressure by bandages or plaster-of-Paris casings diminish the size of the limb, especially in those cases which follow chronic eczema in England. Sometimes the limb ulcerates, and it may be a question whether amputation should not be performed.

AINHUM.

The name "Ainhum" signifies "to saw," and is the term applied to a disease which is said to exist amongst the Africans; Dr. Collas affirms that it occurs in India. The disease consists of spontaneous amputation of the little toes, with hypertrophy of the amputated part, as shown in the figures given, and for that reason I notice it here.

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* Cases illustrating the treatment of Elephantiasis Arabum by the ligature will be found recorded as follows:—Buchanan, British Medical Journal, 1867, p. 465; Vanzetti, Gaz. des Hôp., No. 144, 1867, p. 572; Carnochan, American Journal Medical Sciences, July, 1867, p. 109; McCall Anderson, Journ. Cut. Med., July, 1867, p. 180; Whitall, New York Medical Journal, May, 1867, p. 115.

A small semicircular furrow first appears in the digito-plantar fold, which gradually increases, without pain or inflammation, the toe enlarging to twice or thrice its size, and getting loose and in the way. If the toe is cut off, the wound left heals very speedily. The cause is unknown. The general health does not suffer. The disease is symmetrical. The amputated toe shows fatty change of the tissues, enlargement of the areolar spaces of some of the bones of the phalanges, the bone tissue between the middle and proximal phalanges being replaced by fibrous tissue, the separation of the toe taking place at the proximal, inter-phalangeal joint, and not the metatarsal phalangeal joint: the cartilage and articular end of the middle phalanx being removed and replaced by fibrous tissue, which looks like an ordinary cicatrix. Information relative to this disease is greatly needed.

Fig. 46.

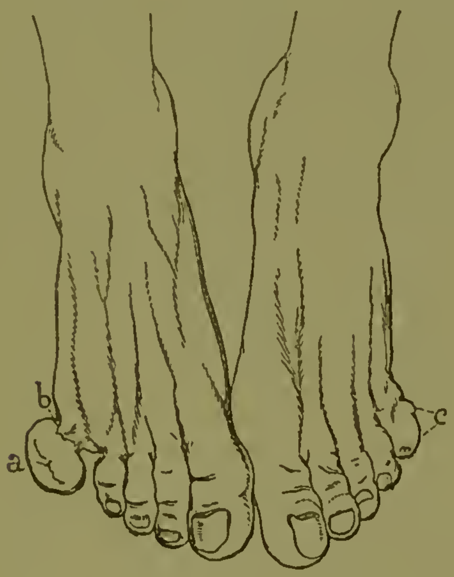

Fig. 47.

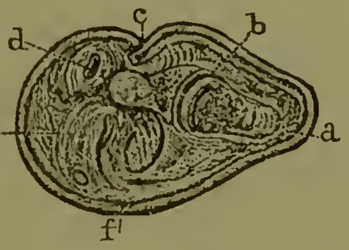

Fig. 48.

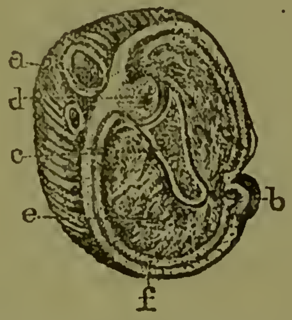

Fig. 46 shows the feet with the appearance of appendages to the little toes; copied from a woodcut in Dr. J. F. Silva Lima's paper in the *Gazeta Medica di Bahia*, for 1867, p. 149.

Figs. 47 and 48 show the appearances presented on section of the appendage.

Fig. 47. *a.* Cicatrix of separation. *b.* Joint between terminal and middle phalanx. *c.* Remains of matrix of nail. *d.* Bursal cavity. *e.* Adipose tissue. *f.* Pigment of rete mucosum.

Fig. 48. *a.* Ulcer left by amputation leading down to bone, *d.* *b.* Remains of matrix of nails. *c.* Ungual phalanx, joint structure unaltered. *d.* Middle phalanx. *e.* Adipose tissue of ball of toe unaltered. *f.* Thickened cutis and rete mucosum.

IV. HYPERTROPHIC DISEASES OF THE VESSELS.

This group includes those diseases of the skin which are called nævi, and also varicose veins. A nævus is simply a hypertrophied state of the vessels of the skin, occupying a greater or less extent of surface, from a pin-point to a whole region, or almost a limb. They may be *congenital* or *acquired*. When the venous tissue predominates they are called *venous*, and when the arterial capillaries are most concerned, *arterial* nævi; the colour is brighter in the latter case. In both classes the depth of surface affected varies. When it is superficial and slightly raised, and the venous radicles are affected, we have the port-wine mark or claret stain. Nævi are oftentimes associated with pigment deposit in them, and may be covered with hair. Some undergo little change; some steadily increase by the hypertrophy of old, or the development of new tissue; the latter assume the aspect of what are called erectile tumours. Microscopic examination shows that the coats, calibre, and radicles of the vessels are all hypertrophied and enlarged. Nævus araneus is the name given to a small nævus of accidental origin in which there is a central prominent red spot—an aneurismal dilatation of an arterial loop—with veins radiating therefrom.

Hypertrophy of the veins proper is frequently seen, and may be caused by obstruction to the onward flow of blood, or a natural want of tone in the vessels. It occurs about the nose very frequently, and in the veins of the leg as varicose veins.

Under this head may be noticed another mixed form of tumour, to which the name of nævoid lipoma is given. Mr. Erichsen has described it as follows: "It is a tumour in which the nævoid structure is conjoined with or deposited in a cellulo-adipose mass. This disease is invariably seated upon the nates, back, or thigh. It occurs as a smooth, doughy, indolent tumour, incompressible; not varying in size or shape; without thrill or pulsation of any kind, possibly having a few veins ramifying over its surface, but no distinct vascular appearance. It is usually congenital, or has been noticed in early life." After removal, it is found to be composed "of a cellulo-adipose base, having a large number of veins ramifying through it, so as to constitute a distinct vascular element communicating with small cysts containing a bloody fluid."

Treatment.—If small, nævi may be destroyed by caustic. If they show a tendency to enlarge, nitric acid should be applied to the extending edge, and the patch destroyed by degrees. In some instances excision is the most easy and rapid mode of cure. When the nævus is extensive and venous, we may pass threads through various parts of the mass, leave them for twenty-four or forty-eight hours, till some slight irritation is set up; then remove them, so that the growth may be obliterated by inflammation. Or we may inject perchloride of iron; but the silk-thread treatment is much the best. In fact nitric acid, excision, and the use of silk sutures are the chief means of cure. So-called pigmentary nævi are rightly described under the head of Maculæ.

B. ATROPHIES OF THE SKIN.

The conditions under which atrophy of the skin occurs are many and various. In the first place, atrophy of the skin may be more or less congenital, and is seen in connexion with xeroderma, for though the main features of this malady are an hypertrophous growth of the epithelium and the papillary layer of the skin, yet before these features become well marked, the skin generally is ill-nourished, and thinned in places, and after the accumulations of ichthyosis are removed, and the disease has apparently disappeared, the skin textures are sometimes thinned and wasted. Atrophy of the skin forms a part of senile decay; it is also secondary to ulceration which occurs in connexion with the formation of new products in the skin, as in lupus and syphilitic disease of the skin; or the degeneration of the normal tissues, as in morphœa: and it results from pressure on the arteries by tumours of different kinds: from nerve disorder, and so on. But I am only concerned here with atrophies which are primary, and such as constitute the sole disease present.

There are two classes of primary atrophies—(1) atrophia cutis, and (2) senile decay.

1. ATROPHIA CUTIS.

The skin may be thinned and wasted in lines or in patches, the atrophy being the sole condition present. Every now and then a case comes before us in which the skin is atrophied in streaks half or an inch or two inches in length by two or three lines broad. This is the *linear atrophy* of authors. The skin of the atrophied part has a lower level than the adjacent parts, and it has a shrivelled and often a reticulated aspect. The cicatrices left in the abdominal wall after the distension of the abdomen, as in pregnancy, are of the same nature. This linear atrophy I have seen as an idiopathic condition, occurring about the legs, arms, and face, and consisting of two or three or many parallel lines of atrophy. It has likewise, as I have noticed, occurred after bad eczema or psoriasis in badly-nourished subjects. When atrophy occurs in patches, it is the result of some nerve lesion as far as I know. I have a case under my care in which the skin of the left half of the forehead and nose is thinned, blanched, shining, and more or less insensible, apparently as a consequence of an attack of zoster faciei, though the history of zoster is not satisfactorily clear. In the cases of true atrophy there is no antecedent deposit of new tissue as in morphœa, which I have already described, and in which the atrophy is secondary, but the atrophy appears as a primary phenomenon. Dr. Berkart has called my attention to a monograph by Dr. Louis

Lande* in which the subject of unilateral atrophy of the face is dealt with. Some interesting matter will be found in the monograph. Dr. Lande remarks that neither hereditary transmission, nor age, nor sex, nor temperament, seem to have any special influence. The disease has followed angina, measles, impetigo of the face, pains in the head—in solitary cases, but in other instances no precursory symptoms of moment have been present. In ten out of eleven times, the left side of the face was affected, the disease began with a peeling of the skin, followed by thinning and depression. The skin gives the same sensation to the hand as cicatricial tissue, the hairs turn white sometimes, the glandular secretions are diminished. The muscular irritability is not altered, nor is the sensibility much altered apparently. The lips may be atrophied, and the tongue and the palate are sometimes atrophied. The senses—taste, sight, and hearing—appear to be unimpaired. Dr. Lande regards the affection as one essentially of the cellulo-adipose tissue, and independent of any affection of the trophic nerves—hence his term *l'aplasie lamineuse progressive.*

The treatment of these cases of atrophy consists in the institution of good hygienic measures, the regulation of the general health according to individual wants, and the judicious use of galvanism.

2. SENILE DECAY OF THE SKIN.

The best remarks on this matter are to be found in Neumann's work, and I shall content myself with a résumé of the conclusions to which his observations have led him. The first great essential change which occurs in the skin of the aged is a diminution in its thickness and condensation. The loss of substance is particularly marked in the papillary layer; so much so, that the outline of the papillæ may be very indistinct, or the papillæ may even disappear, the nerve-corpuscles and vascular loops alone indicating their former presence.

The several parts of such an atrophied skin easily degenerate, hence several forms of retrograde metamorphosis are observed in it. Neumann specifies five: (1 and 2) *Molecular* or *granular degeneration* of two kinds, coarse and fine; (3) *colloid* (Rokitansky), *vitreous*, amyloid or hyaloid (O. Weber) degeneration; (4) *fatty* degeneration; and (5) *pigmentary* deposition. The granular changes are common, the three last of much rarer occurrence.

In the granular degeneration, where the particles are fine and numerous, the fibres of the connective tissue are indistinct, and the texture of the cutis generally presents an albuminous appearance. When the particles are of the coarse variety, they are found chiefly in the upper layers of the cutis; whilst the normal fibres of the cutis remain visible to some extent, which is not the case where the granular matter is of the finer variety. Neumann argues from these facts that the granular material is the result of the breaking up or the contraction of, the fibrillæ, the finely-granular being the final stage of the degeneration.

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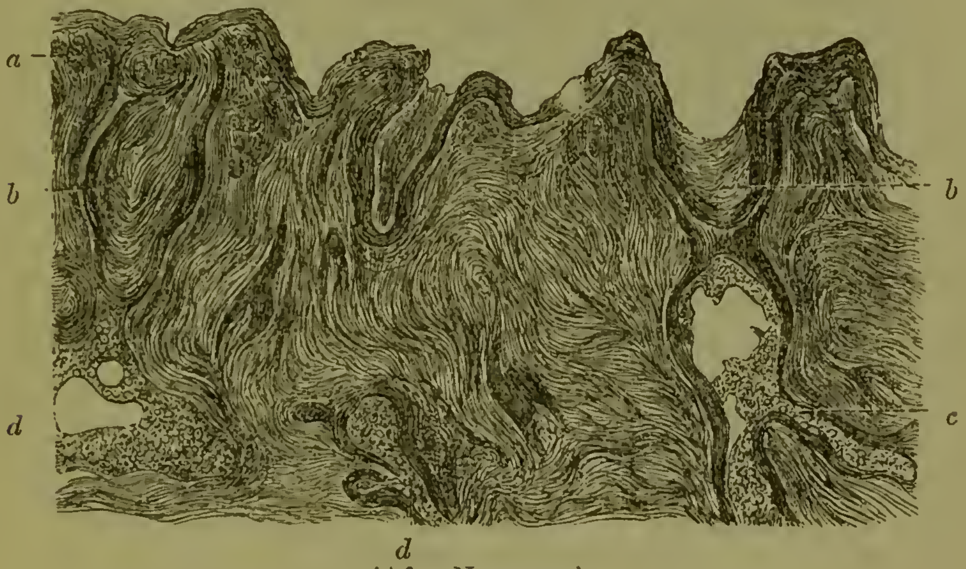
* Essai sur l'Aplasie Lamineuse Progressive (Atrophie du Tissu Connectif): celle de la Face Particulière (Trophoneurose de Romberg), &c. Paris: Victor Masson and Co. 1870.

The *vitreous* degeneration is characterized by the entire alteration of the whole texture of the cutis into a substance resembling "solidified glue," nerve and vessel, gland and muscle being quite unrecognisable. The change commences, in the first place, in the walls of the small arteries, which are soon narrowed in calibre. This kind of atrophous change is common about the face and neck in persons beyond fifty.

The *pigmentary* degeneration shows itself by the appearance of a great quantity of pigmentary granules in the rete cells and also in the outer root sheath, particularly its upper half, and in the form of diffused masses here and there in the upper part of the corium.

These changes do not affect the epidermis, of course, for they take place in the cutis, but the epidermis is generally thinned, the rete cells being few and pigmented, whilst the horny layer is thin and its cells imperfectly hornified in places. In some cases wart-like prominences are produced by the hypertrophous growth of the epidermic layer, but the cells if heaped together are immature. These changes are seen in fig. 49.

Fig. 49.



(After Neumann.)

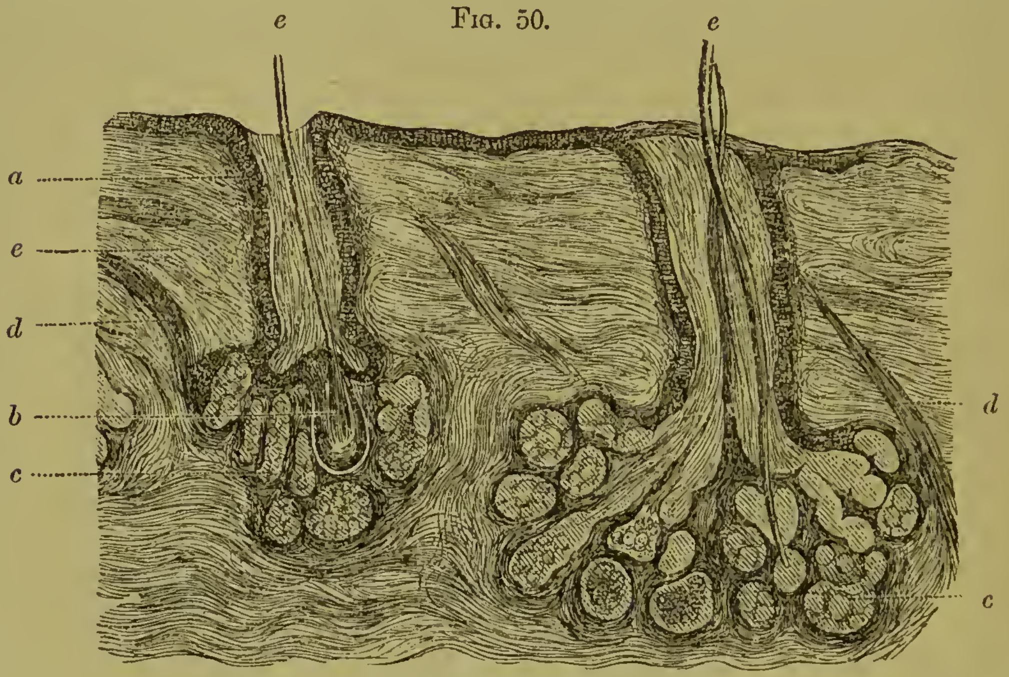
Section of sessile skin of forehead, showing shrunken hair follicles, some containing epithelium, others sebum, and into whose base the enlarged sebaceous glands open. *a.* Granular cutis. *b.* Shrunken follicle with outer root sheath. *c.* Cells in follicle. *d.* Section of enlarged gland.

Neumann further states that the blood-vessels of the skin are dilated and varicose, but not obliterated except in connexion with vitreous degeneration.

The loss of hair from bald places in the aged is a characteristic feature, and I quite agree with Neumann that the cause is to be sought, not in the obliteration of the vascular loops going to the hair papillæ, but in the degeneration of the tissue of the hair-papillæ, which being a portion of the cutis is involved in the changes by which it is generally affected. The hair follicles themselves only waste when the hair ceases to be formed, and Neumann states his inability to find any trace of the hair papillæ in bald (senile) places amongst the little mass of pigmented cells which are found at the bottom of the hair follicle. The material which is elaborated into hair is at first imperfectly and irregularly deposited. Then the hair formed is downy, the root sheaths are imperfectly developed, until presently no further attempt at hair formation is made, and the follicle finally shrinks from the fundus to the opening of the sebaceous glands, the inter-follicular fibrous wall of the follicle however remaining in the form of connective-tissue bundles, and the upper part of the follicle remaining as the duct of the sebaceous glands.

The glands in the senile skin undergo much change: they are atrophied or entirely disappear in the parts which are normally furnished with downy hairs, but in other regions supplied naturally with well-developed hair they seem to be invariably hypertrophied, in the manner represented by Neumann in the accompanying figure (fig. 50).

Fig. 50.



(After Neumann.)

Section of skin from a bald head. *a.* Hair follicle filled with horny cells. *b.* Downy hair. *c.* Greatly enlarged sebaceous gland. *d.* Arrectores pili. *e.* Muscular fibres.

The perspiratory glands do not appear to be much altered.

The wrinkles of the skin are caused mainly by the loss of elasticity and contractility due to the atrophy of the tissues.

The symptoms to which this senile decay of the skin gives rise will be described under the head of Pruritus Senilis.

Atrophy of the hair, other than senile, as in alopecia, will be spoken of in treating of diseases of the hair.

CHAPTER XVI.

NEW FORMATIONS, OR NEOPLASMATA.

GENERAL REMARKS.

NEOPLASMATA are *essentially* characterized by the formation of new kinds of tissue in the skin. Neoplasms are observed in many different diseases of the skin, and under a variety of circumstances, but those diseases only are included in this chapter in which a neoplasm forms the entire disease. The new tissue in neoplasms has been regarded as originating in, and therefore an hypertrophy of, already existing elements; but it is certainly not a pure hypertrophy, and it is new in regard to its characters and behaviour. On this account it is impossible to include the neoplasmata in any but a special group. The diseases which I shall describe in this chapter, as consisting solely in the presence of neoplasms in the skin, are lupus, cancer, and rodent ulcer. Now though in these diseases the local tissue changes constitute the primary, the essential, and at first, as before stated, the sole disease; yet in the later stages of some, the general system may become deranged, whilst occasionally secondary growths are at the same time developed in various parts of the body. But these phenomena are entirely secondary; in the former case they result as a consequence of the influence exerted by the local disease on the general health, and in the latter upon the infective quality of the primary mischief in the skin.

LUPUS.

This disease is characterized by an infiltration of the skin with a new cell growth, which is incapable of undergoing organization, and after a while is removed by interstitial absorption or by ulceration. The neoplasm takes the form generally of tubercular elevations, forming by their close approximation larger or smaller patches, which leave behind in process of cure indelible cicatrices.

There are three forms of lupus, according to English writers. The first form, in which the deposit is slight and superficial, whilst there is no ulceration, is called *lupus erythematodes*; it is different from the disease bearing the same name amongst German writers, and which has its seat in the sebaceous glands especially. The second form, in which the deposit is greater, giving rise to the tubercular formations, and in which there is little if any ulceration, is termed *L. non-exedens.* The third variety, *L. exedens,* is that in which ulceration occurs, and eats deeply into the tissues. Sometimes hypertrophy occurs together with cicatrization; hence the unnecessary term *lupus hypertrophicus.*

Now the truth is, that these forms of lupus are merely degrees of one and the same thing. If the neoplastic deposit is slight, and in the form of brownish-red spots or diffused non-nodular elevations, then the English call the disease *lupus erythematodes.* If the deposit or neoplasm forms distinct tubercular elevations, and does not ulcerate, the condition is termed tubercular or non-ulcerating, or *lupus non-exedens;* and if the lupus ulcerates, it is designated *lupus exedens,* or *exulcerans.* The terms *lupus vulgaris* is now more generally employed to signify all the non-ulcerating phases of the malady. I venture to repeat the statement that the reader must not regard the lupus erythematodes of the English and the Germans as the same in character. But to prevent confusion, I shall first describe the characters, nature, and treatment of ordinary lupus, and then deal with L. erythematodes in a separate and subsequent section.

A. ORDINARY FORMS OF LUPUS.

Lupus Erythematodes of the English.—In its least severe or more superficial form—the *erythematous* variety of English writers—lupus consists of roundish patches of a deep red colour and shining aspect, without sensible elevation. The skin looks as though it had somewhat wasted, or become dry and shrunken from being "seared," being at the same time reddened. The morbid process creeps over the healthy skin (erythema centrifugum of Biett), and the diseased surface becomes covered over with thin adherent scales, which on removal expose a dry yet raw-looking surface of gelatinous aspect, which is apt to bleed readily. Lupus might be described in its slightest form as like an obstinate erythema, with slight loss of substance. The central part of the well-marked disease often thins without ulceration; the disease spreads from its boundary-edge, and its surface may exhibit some slight tendency to form crusts. The seats of this lupus are the face, the cheek, the nose, or even scalp; general constitutional symptoms are absent, and so is local pain. The disease may ulcerate, and this occurs when the subjects attacked are scrofulous, which is not always the case, at least to the appreciation of the physician, or when the patient is cachectic. The disease mostly attacks children, and especially those of the lower orders. Of course individual cases vary slightly in aspect—from in fact an apparent erythema of dull red colour and great obstinacy, leaving behind a slight cicatrix, to, in other cases, a slightly indurated or elevated patch, in which the loss of substance subsequently is somewhat greater. Patches of this lupus may occur on the scalp, and on the fingers, hands, and toes, resembling chilblains, but the patches are present throughout the summer, and are accompanied by slight loss of substance, thus differing from chilblains. This last-named phase of lupus may co-exist with severer degrees of the disease.

Lupus non-exedens, the term given to the next degree of severity of lupus, has as its basis the form first described; but, in addition, little nodular elevations, which are softish, round, of a dull red, or reddish-yellow colour, often quasi-gelatinous-looking, stud the part, and by their aggregation or fusion form a patch of greater or less extent, and generally of circular or serpentine form. The tubercles are covered by little scales, presently quasi-scabs; and little vessels are seen to run over and through the tubercles; this is somewhat characteristic. This phase of lupus is seen in the face, especially about the nose, the lips, and chin. The central part of the patch may clear and cicatrize as the result of an absorptive process, without true ulceration, whilst the outer part remains tubercular. If the scales be removed from any portion of a lupus patch of the kind under notice, the part beneath is found to be red, dry, shining, or even raw; the upper layer next the cuticle presents an appearance which has been termed "cornified," being of transparent glue aspect. The papillary layer of the skin is mostly affected in this disease. The process of healing is as in the other phase of lupus, always attended by more or less loss of substance and sensibility; the cicatrix is below the level of the adjacent surface. The loss of substance is rather by interstitial absorption than ulceration, as before observed.

Lupus Exedens.—In this variety or form of lupus, ulceration is marked. The lupus commences in the usual manner by the aggregation of tubercles, it then slightly discharges whilst crusting, and subsequent ulceration occurs. The tubercles in this variety are perhaps harder, and lack the transparency of those in L. non-exedens. The ulceration varies in depth, being in some cases comparatively superficial and extensive, or, on the other hand, deep and circumscribed. The peculiar destruction of tissue affects all the structures so that even the glands and hair-forming apparatus are destroyed. The disease may attack the vulva.

Etiology of Lupus.—Lupus is a rare disease after thirty-five, and not common after thirty years of age. It may be seen in the earliest years of life. It is often regarded as an evidence of the strumous diathesis in the attacked, but I cannot subscribe to this view. Lupus, no doubt, often occurs in strumous subjects, but it may be present in those who have not a trace of struma about them. I am much more inclined to regard the disease as showing a predilection for the tuberculous subject; indeed, in many cases it occurs in phthisical subjects. The disease is more common in the country than in town, and rather more in the female than the male sex. Devergie found that twenty-five out of forty-seven cases were females, and Hutchinson forty-six out of seventy-four. Lupus is most common in persons whose ages are between fifteen and twenty-five; sixteen years was the average in Hutchinson's seventy-four cases. Its selective seat is the face. In forty-one of forty-four cases, according to Devergie, this was the case; the nose was affected in sixteen cases; the nose and other parts of the face together, in twenty-six cases; the lips, four times, &c. Lupus is on the whole a disease of the poor rather than the rich. My own observations are confirmatory of the above statements.

Pathology.—The material which constitutes the tubercles of lupus is a new formation. It is made up of small round cells resembling lymph corpuscles, and answering in the mass to the characters of granulation tissue, as described by Virchow. It is to Auspitz, Neumann, and Rindfleisch, that dermatology is chiefly indebted for a clearer insight into the morbid anatomy of lupus. In ordinary lupus the seat of the cell infiltration is the corium. My friend Dr. Auspitz,* found (see fig. 51) that in the early stage of tubercular (non-exedens) lupus the epidermis was arched forward, the Malpighian layer increased in extent, though it was not notably altered in structure. In the fully developed disease the corium is increased in thickness throughout. The papillæ are more prominent, and the fibrous tissue elements are more abundant, on account of the presence of thicker fibrous bands and meshes than normal, which meshes are increased by additional fine fibres forming still narrower meshes. The whole corium thus increased from the papilla above to the subcutaneous tissue below, Auspitz finds to be uniformly loaded with a cell growth, the cells of which are oval, and have more or less distinctly nucleus; the cells vary in diameter from ·003 to ·005 mm. The origin of these cells from the connective-tissue corpuscles, a view held by Virchow, seems to be indicated by the presence of transitional forms between the two. The sebaceous glands appear to be obliterated. The sudoriparous glands remain unchanged. The hair follicles are in many places transformed into round alveoli, and constitute the yellowish-white tubercles so often seen shining through a patch of lupus. The subjoined illustration (fig. 51) is from Dr. Auspitz's essay, and portrays the above-mentioned changes.

In the cases of lupus, in which the disease consists not so much of tubercles as in a superficial infiltration, Dr. Auspitz noticed that the rete Malpighii was increased to twice or three times its normal thickness, its cells having apparently undergone fatty change. The papillæ were filled with the lupus cells, which were especially abundant along the capillary vessels therein, the vessels themselves being dilated and coiled to a marked extent, and surrounded by an increased amount of connective tissue.

When lupus cicatrizes, the "lupus scars" are composed at first of hypertrophied connective tissue, enclosing scattered masses of the cell-growth, and unless ulceration occur the papillary layer may remain intact. But the obliteration of the glands and hair follicles is complete. After ulceration and healing, the papillæ are more or

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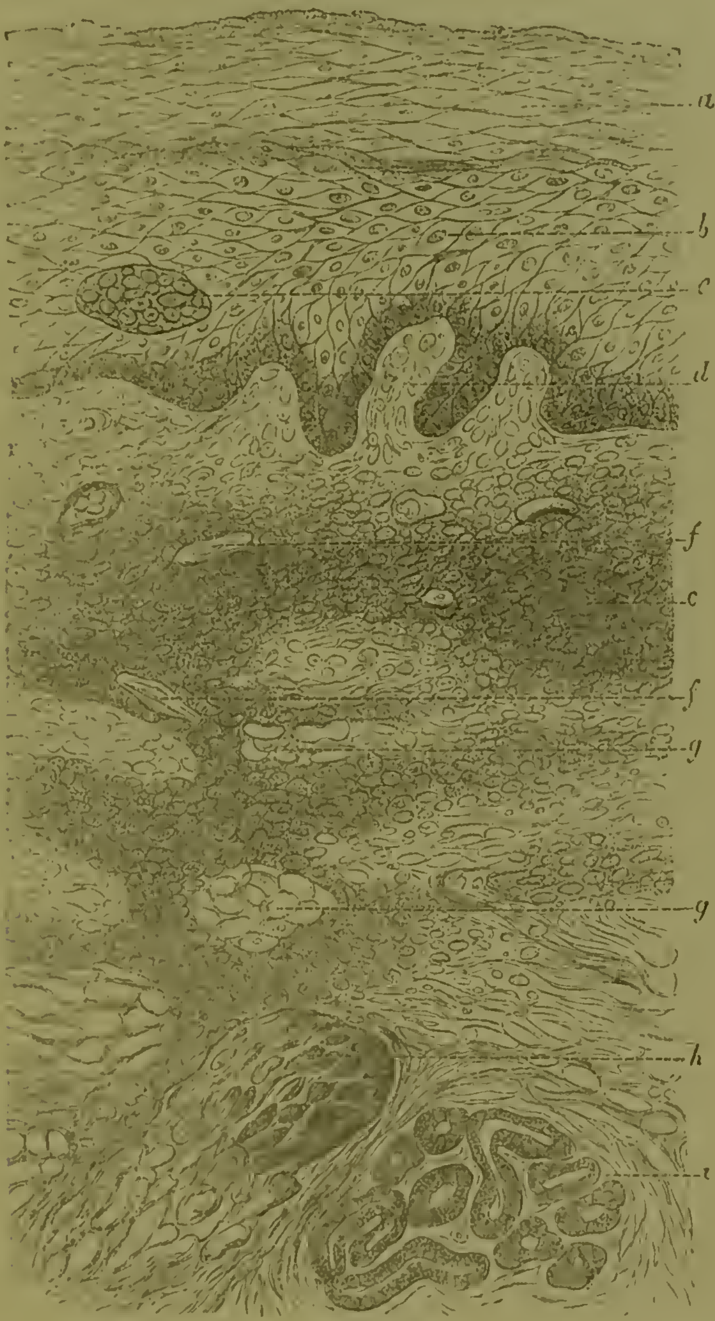
* Ueber die Zellen-Infiltrationen der Lederhaut bei Lupus, Syphilis, und Scrofuloze. Wien, 1864.

Fig. 51.



(After Auspitz.)

Vertical section through a lupus nodule of the face, treated with dilute acetic acid. × 300. *a.* Horny layer of epidermis. *b.* Rete. *c.* Corium filled with cells of new formation. *d.* Papillary layer. *e.* Transversely-cut papilla. *f.* Transversely-cut vessel of corium. *g.* Transversely-cut connective-tissue bundles. *h.* A cut muscle. *i.* A sebaceous-gland coil.

less destroyed. In ulcerating lupus, the papillary layer of the cutis gradually becomes exposed and is cast off, its component parts being in a state of fatty metamorphosis; whilst fatty degeneration of masses of the lupus tissue is observed deep down in the cutis. The ulcer has as its base ordinary granulations covered with the ordinary layers of pus. Auspitz observes that "neither the pus nor the base of the ulcer, nor its limitation and form, present any characters distinguishing it from other ulcerations arising in similar conditions."

Prognosis.—The non-ulcerating forms are manageable, but require great attention and care. The other forms often lead to deformity, and are intractable to a high degree.

Diagnosis.—In diagnosing lupus it is requisite to bear in mind that it occurs in young people, runs an indolent course without pain, is seated mostly on the face, and possesses softish vascular tubercles, slight scaly adherent crusts, and a gelatinous aspect of surface beneath them. There is no true ulceration as the rule; the edge is dull red and inflammatory. There are attempts at repair in the shape of cicatrices; the glands are unaffected, and the general health is not cachectic, though it may not be good: the patient however may be florid.

In some cases of *acne*, the sebaceous glands may atrophy, and depressed cicatrices are left; but the seat of the disease, and the absence of tubercles, suffice for the diagnosis.

Cancer as contrasted with lupus affects especially the lower lip; it does not occur before thirty: it is painful; its ulcer possesses everted, undermined edges, which are considerably indurated; its surface is fungoid; there are no attempted cicatrices; the glands are diseased; there are no crusts over the ulcer, but an offensive discharge, and the general health is bad. In *syphilis* there are the earthy hue and the general cachexia different from the clear skin of a lupus patient; the tubercles of syphilis are larger, round, hard, and copper-coloured; they have no great tendency to desquamate, but tend to suppurate and to ulcerate. They are found on several parts of the body at the same time. The tubercles of lupus are flatter, softer, and covered by thin scales. Syphilitic ulceration is foul, dirty, sloughy, and presents a copper-coloured areola; the crusts of syphilis are greenish; the edges are sharply cut and everted; in lupus with ulceration the edge is dull red, inflammatory, and non-everted, and the surface is not foul. Syphilis has also a special history and special concomitants. In *rodent ulcer* the tubercle is large; the disease occurs in old age; there is only slight tendency to healing; the course is very chronic, and there is pain.

Treatment.—It will be evident from what has been said in regard to the pathology of the disease that the *real* treatment consists in the destruction of the lupoid tissue by caustics. But general remedies are often needed to aid the cure, since lupus patients, especially the young, are often flabby, pale, anæmiated, and perhaps unable to get proper food. In a fair proportion of cases those attacked by lupus are phthisical or phthisically inclined, and this seems to indicate what turns out to be successful—

the use of cod-liver oil and iron in full doses. But then there is often weak digestion present in patients, and this needs to be remedied in the first instance by mineral acids and bitters. If possible, change of air should be secured the patient, who should sleep in a lofty and well-ventilated room, and take a large quantity of animal food, with more or less milk. A moderate amount of stimulants is also beneficial. In adults, general debility oftentimes allows a strumous or a phthisical tendency to have its way; and in these cases deficient assimilation often exists. In such instances I have seen the best results from large doses of nitric acid with bitters, and nux vomica. If there be loss of flesh and pallor, the syrup of iodide of iron or the superphosphate with cod-liver oil does good. In florid subjects the mineral acids act best, but these, to do any real good, must be given largely.

But I think it important to direct attention to two complicating or modifying conditions—the strumous and the syphilitic taints. I have spoken above of uncomplicated lupus: and of phthisis in close connexion with the disease. But I do not regard the presence of a phthisical tendency in lupus patients as a complication, believing that these persons are, if not actually, yet potentially phthisical. But lupus often occurs in syphilized or strumous subjects, and then it is modified, as I think, by the strumous habit or the syphilitic taint as the case may be. Where struma co-exists it has seemed to me that the lupus tends to discharge and to crust more or less freely, and perhaps to ulcerate readily. In such a case certainly anti-strumous remedies do much good. Amongst other remedies under these circumstances, the preparations of iodine will be found efficacious.

I mentioned a syphilitic taint as a complicatory condition; but many instances of lupus occur at too early an age to suppose that this complication can have any influence on the disease in them. Yet in adults the case is different. Now and then I meet with cases of lupus in strong and healthy subjects which do well under the influence of mercurials administered internally. The explanation may be that the drug hastens the absorption of the new lupus tisue, or that the drug acts upon the syphilitic taint; I am uncertain in which direction the truth is to be found. But I am inclined to think that some cases which are generally regarded as non-exedent lupus attacking the nose especially, and in which the deposit is pretty uniform, and the tubercles small and few and less vascular than usual, are in reality cases of syphilitic disease hereditarily transmitted rather than instances of true lupus. I cannot avoid saying that occasionally I have known severe dyspepsia aggravate an hyperæmic lupus, the latter being much benefited by the removal of the dyspepsia. In the ulcerating lupus Donovan's solution will be found useful.

The *local treatment* of lupus is perhaps more important than the general. I am anxious to say that I am by no means sure that many cases of lupus in their earlier stage are not rather the worse than the better for the stereotyped treatment which is generally employed with a view to their cure. On the one hand, in some instances no local measures whatever calculated to check the increase of the disease are adopted, and so the lupus progresses with great rapidity, whilst the practitioner trusts to the exhibition of internal remedies which he thinks exert a specific control over the progress of the disease, but in truth only stay it in an indirect manner through the general improvement of health they induce. On the other hand, where local measures are employed, they sometimes, from the fact that they are used inopportunely, augment rather than diminish, and certainly favour the spread of the disease. As I have before observed, the essential thing to be done is to cause the absorption of, or to destroy at once by caustics, the neoplasm of lupus. But there is a proper time and proper circumstances under which this should be done. Caustics, it seems to me, should be had recourse to when the deposit feature is well marked, and when the lupus patch is not too sensitive and too hyperæmic. I am sure it is important to recognise, *quoad* local treatment, three stages of lupus: the stage in which the congestion is a marked feature—this is mostly at an early date; the fully developed stage or state; and the healing stage. I believe the treatment of all cases of lupus, especially of the slighter and more superficial forms, where the congestion is marked, the patch tender and hot, should be an essentially soothing one. The access of air tends to accelerate cell changes, and where congestion is very active any stimulant treatment, unless it be severe, tends to increase the amount of blood in the part, and to accelerate the morbid tissue change and to spread the disease; for if a lupus patch is very hyperæmic, the tissues around are hyper-sensitive oftentimes. For some years past I have at first soothed all lupus patches, especially those about the face, when much congested, hot, and irritable; and I know nothing better than a calamine lotion, with a little prussic acid and glycerine, applied several times a day, and the use of liq. plumbi painted on each night, which I find of great benefit in superficial lupus, accompanied by much vascularity. It may be necessary to touch the edge of the patch, *if it shows signs of extending*, by some caustic, but this should be done cautiously. Whilst by local means one quiets the lupus patch, by general measures the health may be improved; and when the lupus patch is less irritable and inflamed, recourse may be had to caustics; but I have seen not unfrequently serious attacks of erythematous lupus get perfectly well by the combined use of internal tonics and the application externally of some mild astringent in such a way as to secure exclusion of the external air. Having got rid of the congestive element of a lupus—I mean the congestion which is easily increased, whereby the patch readily becomes hot and tender, and full of blood—then is the proper time for the use of caustics, of which there are many. But I think in some of the minor cases, where there is a disposition to improve, and the tubercles are not large, that the emplast. hydrargyri, applied each night may suffice. But if there are distinct tubercles, and there is any spreading, there is no alternative but to cauterize. Some use equal parts of caustic potash and water, brushed freely over the diseased part, a poultice or a neutral unguent being applied subsequently. Another application is that in Formula 10. It is used three times a week, brushed over the patch, which is then covered up with lint or oil silk. For preventing the spread of lupus, and destroying the tubercular form, I apply the acid nitrate of mercury; for severe and long-standing cases with much deposit I certainly give the preference to nitrate of zinc paste, which is thus made :—nitrate of zinc ʒjss, distilled water ʒj, glycerine of starch ʒj, wheat-flour ʒj, to make a paste. (This is one part in three.) For bad cases one part in two may be used. The patch is covered by a layer of the paste freshly made, and if much pain ensues a poultice is applied. The raw surface that results may be dressed with zinc ointment, or a little liquor plumbi rubbed up with adeps. When the sore has dried up, or crusted over, the caustic may be reapplied till all the growth is destroyed. In those cases in which dark crusts form, and the lupus discharges, a very successful plan is to clear off the scabs with a poultice, and dress the surface with a weak ointment of the pyroligneous oil of juniper ʒj to ℥j of lard. If the sore spreads, or there is much thickening, the nitrate of silver stick should be freely applied, *à la* Hebra; that is to say, it should be pushed into the patch until it meets with resistance from the firm tissues beneath or around, and then used to stir up the mass of the lupus patch. It should be used in this manner twice a week; the operation if effective is painful, the pain lasting two or three hours at a time.

The repetition of any caustic used depends upon the effect upon the patch, of course. In the exedent form the solid silver caustic and the acid nitrate of mercury are the best. They must be deliberately and freely applied, and chloroform should be given if necessary when they are used. The chloride of zinc is preferred by some, the acetate by others. The latter is applied in crystal, and a lotion or ointment of gr. viij to ℥j of the substance kept applied subsequently. Others, again, commend nitric acid, mixed into a paste with sulphur, and laid on with a spatula. After caustic applications a poultice should be applied, and the surface dressed with a soothing ointment—elder flower and liquor plumbi. When a lupus patch is the seat of unhealthy ulceration it may be cleansed by the use of iodide of starch to it—a remedy which I use with much satisfaction in all forms of unhealthy syphilitic ulceration.

In all cases where the disease has been arrested, and tends to heal, any mild stimulant or astringent application may be used, such as glyceral tannin, or nitrate of silver dissolved in nitrous ether (gr. xx—xxx to ℥j). It must be remembered that local remedies act in efficiency in proportion to any improvement in the general health which is brought about by our internal remedies. I think it important to avoid the use of local remedies when these produce persistent heat and swelling, for under such circumstances the local applications only tend to the spread of the lupus, by interfering too much with the healthy action of the contiguous unaffected skin, and therefore the local reparative process. The disease *can* be made much worse by caustics. For other remedies, see Formulæ 14, 16, 17, 20, 129, 153, *et seq.*, 171.

B. LUPUS ERYTHEMATODES OF THE GERMANS, OR ACNEIFORM LUPUS.

In order to avoid confusion I repeat here that the *erythematous* lupus of the English and the Germans are somewhat different. The English practitioner applies the term to the most superficial form of lupus vulgaris, in which there are no distinct tubercular elevations, but in which the lupus neoplasm is thinly diffused, as I have described in the previous section. Hebra and his followers apply the designation to a form of disease which is seen about the face and the head, and which commences in the sebaceous glands, and is accompanied by the formation of new tissue in the corium, but chiefly in the wall of the sebaceous glands—like lupoid tissue, Hebra, in fact, once described the disease as a *seborrhœa congestiva.* As will appear presently, Rindfleisch regards the disease as an *adenoma* of the sebaceous glands.

General Description.—The disease begins generally by papules that resemble those of ordinary lupus, only that their centres show the opening of the hair follicles, and they are covered over by little scales, more or less adherent, and occasionally by slight crusts. As the disease advances patches are formed, which have as it were as a basis, the condition of the slighter forms of lupus vulgaris, but in which the follicles are observed to be more or less prominent, and, perhaps, slightly plugged, if the patch is not covered over by scales. By-and-by the central part of the patch thins from the deposit being removed, and distinct atrophy may eventually appear here and there, whilst the disease spreads at the periphery by the formation of new papules. The whole side of the face or both cheeks, or in severe cases most of the face, may become diseased, and then the portions of the disease which first appeared have generally cicatrized; the surface in these spots being thin, and more or less parchment-like. The disease does not ulcerate as in lupus vulgaris.

Neumann, in speaking of the disease as it attacks the scalp, observes that the diseased skin becomes bald in a circular patch; the orifices of the follicles at first enlarged and plugged with sebum, presently are lost to view in the scarring which follows, and the cicatrices sometimes ulcerate anew. The red portion of the lips and also the ears are, according to the same author, affected in most cases at the same time, and have dry scales upon them; the body and extremities being affected in rare instances, and very seldom the palm of the hand.

The disease is accompanied by not a little irritation at times. Females of the age of twenty, or thereabouts, are more liable to it than others. The disease is rare before twenty, but it has been noticed in a child at seven years of age.

The diagnosis of this lupus erythematodes of the Germans, is based upon the fact that, to the naked eye, the hair follicles and related sebaceous glands are seen to be the primary seats of the mischief—the acne-like spots being observed to stud a surface in other respects similar to the superficial infiltratory lupus vulgaris.

Pathology.—It is from the German workers again that our knowledge of the morbid anatomy of lupus erythematodes is derived. Neumann, Rindfleisch, and Auspitz have each contributed ably to the subject. Neumann,* as the result of his observations made in the year 1863, declares that the morbid changes in "lupus erythematodes" commence as a thickening of the walls of the sebaceous glands, consequent upon an increase in the connective tissue elements, and the development of new cells; these changes occur, not only in the interior of the glands, *but also outside in the tissues around.* The glands become choked with elements, and enlarged, and then gradually lose their acinous structure, being presently destroyed altogether. The hair follicles about the hair sacs participate in the same kind of change, with loosening of the hair from its sheaths. But, in addition, the papillary layer of the skin undergoes remarkable changes. Its connective-tissue elements are increased in amount; and this, together with a certain amount of cell infiltration, causes the papillæ to be greatly enlarged in size. The cell infiltration is also found in the deeper parts of the corium. Neumann further states that in certain cases, the cell infiltration is so extensive that the *conditions of the cutis* are *not to be distinguished from those of ordinary lupus*; fatty changes take place also in the new tissue, and pigmentary deposits mark the site of obliterated vessels. Neumann thus represents the changes he describes (see fig. 52).

Rindfleisch,† as the result of his observations, lays great stress upon the limitation of the disease to the sebaceous glands. He declares, as it appears to me, that all forms of lupus originate as an adenoma of the glands. He affirms that all lupus nodules, wherever they be situated, at least in the form of the disease under notice, have an acinous structure.

That in lupus erythematodes the disease is essentially an adenoma of the sebaceous glands, as averred by Rindfleisch, seems doubtful from Neumann's observations, in a case of lupus erythematodes (German) in which the disease occurred not only on the face but on the palm of the hand, where no sebaceous glands or hair follicles exist, whilst the new growth was found about the junction of the rete and the cutis. I may likewise appeal to the observations of Auspitz,* who declares as the results of his investigations, that in lupus erythematodes the microscope detects the presence of a new formation resembling the cell-infiltration of lupus vulgaris, but seated in different parts of the cutis, especially in its higher layers, as in fact Neumann has likewise observed.

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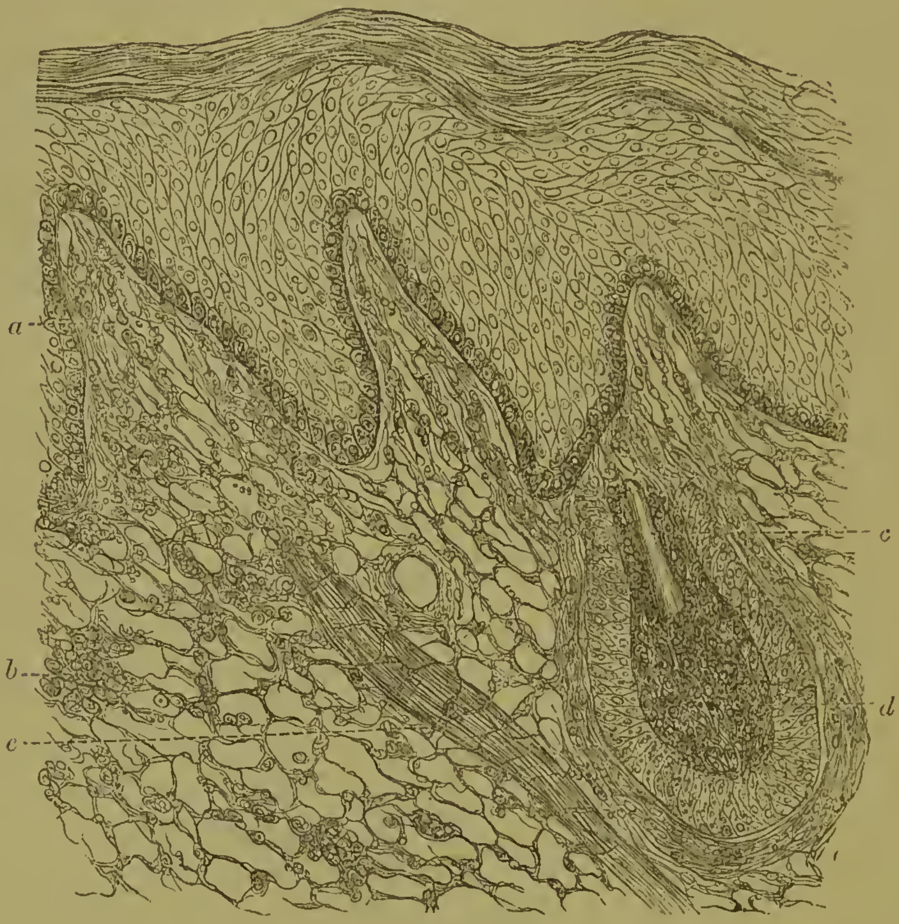
* Wien. Med. Wochenschr.

† Lehrbuch der Pathologischen Gewebelehre. Leipsic; Engelman, 1867-9.

FIG. 52.



(After Neumann.)

a. Enlarged papilla with cell-infiltration. *b.* Accumulation of cells. *c.* Hair (cut). *d.* Sebaceous gland with infiltration. *e.* Arrector pili.

At the same time the hair follicles and sebaceous glands appeared to Auspitz changed in a manner similar to that observed in lupus vulgaris.

Nature and Relations of L. Erythematodes.—Now it must be evident from the above statements that the attempt to make a separate variety of lupus in cases where the sebaceous glands are prominently involved in the lupus growth is an over-refinement. Clinically the lupus erythematodes of the Germans is simply lupus in connexion with a certain amount of hypertrophy and irritation of the sebaceous glands in the first instance, in consequence of which they become thickened and loaded with contents prior to their destruction by the new growth. This is shown to the naked eye by the dotting over of the lupus patch with the distended and plugged orifices of the sebaceous glands. In all cases of lupus the glands are invaded and presently destroyed; and even in cases of lupus vulgaris a sebaceous gland may be seen here and there very prominent. I think the term lupus erythematodes a very bad one for the disease as it is described by Hebra, inasmuch as in some cases the hypertrophy of the connective tissue in the wall of the glands is the most marked feature, the amount of lupus cell growth being small: and I would much prefer *lupus acneiformis,* or *adenoma lupiformis,* especially as L. erythematodes is a good name, if wanted, for the minor non-tubercular phases of lupus vulgaris.

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* Loc. cit., p. 16.

Something very like the changes that are said to occur in the lupus erythematodes of the Germans is observed in certain cases of sycosis of the whiskers, in which the disease begins by suppuration of the hair follicles and sebaceous glands—sometimes like an acne, and at others a pustular eczema—to be succeeded by thickening of the walls of the follicles and the extension of the infiltration to the tissues generally, with subsequent atrophy of the tissues, together with scarring and destruction of the hair follicles and their related glands: the disease at the same time extending centrifugally (see Sycosis). It may be that in some cases the lupiform condition may arise secondarily in connexion with primary changes in the follicles and sebaceous glands, and that this is marked in such a way in Germany as to deserve special recognition by the manufacture of a new variety; but at least in England, I have not seen lupus changes in connexion with the sebaceous glands, except in one case, so distinct or so frequent as to lead me to think it necessary to regard it as worthy of special designation. In the case to which I referred, the disease commenced as a seborrhœa, accompanied by the formation of acne-like spots in groups, which thickened at their bases and ulcerated slightly; the general surface of the diseased area assuming the aspect of lupus. This must be, I take it, regarded as an acneiform lupus. But whether the deposit is truly lupoid or only simple inflammatory I cannot tell, except that, like lupus, it undergoes degeneration and never organization. I have seen this same condition occur in connexion with scattered acne-like spots on the trunk, and particularly the limbs, each spot leaving behind distinct pitted scars.

Treatment.—All depends upon the degree of gland implication. If the general infiltration of the skin is great, then the case is one suitable for the ordinary treatment of lupus, already given in detail. But if the seborrhœa or acne is marked, and the general infiltration not so distinctly so, then I believe that milder local remedies are called for. One of the best, if the part is hot, irritable, and tender, is a bismuth ointment, ʒj or ʒij to an ounce of lard, combined or not with a little tar or creasote. But if this be too stimulating, and if the edge of the patch is much reddened, and shows signs of extension, and there be pain, the liquor plumbi may be painted over the disease, or glyceral tannin applied night and morning for a while, and until the patch has become less irritable. Subsequently, unless there be much thickening, the use of mercurial plaster applied every night may cause the resorption of the newly-formed products. As it is of consequence to exclude the air from patches of the disease, I generally use a calamine lotion in the daytime. Of course if the patch is indolent and there be no marked hyperæmia, caustics may be at once applied. None are better than the nitrate of zinc paste or the acid nitrate of mercury; and when a sufficient depth of tissue has been destroyed, a weak iodide of sulphur or nitrate of mercury ointment may be used, unless it cause irritation. But during the time that local measures are being employed, the patient should be well looked after as regards general medicines, which should be administered according to the general principles laid down with regard to lupus vulgaris. I think much of cod-liver oil, and but a little of arsenic for these particular cases.

CANCEROUS AFFECTIONS.

Under this head I have to describe epithelial cancer and a disease allied to, if not identical with it, called rodent ulcer. It is generally believed that rodent ulcer is the least expressed form of epithelial cancer; but as it has clinical features of some peculiarity, I shall describe it separately.

EPITHELIAL CANCER, OR EPITHELIOMA.

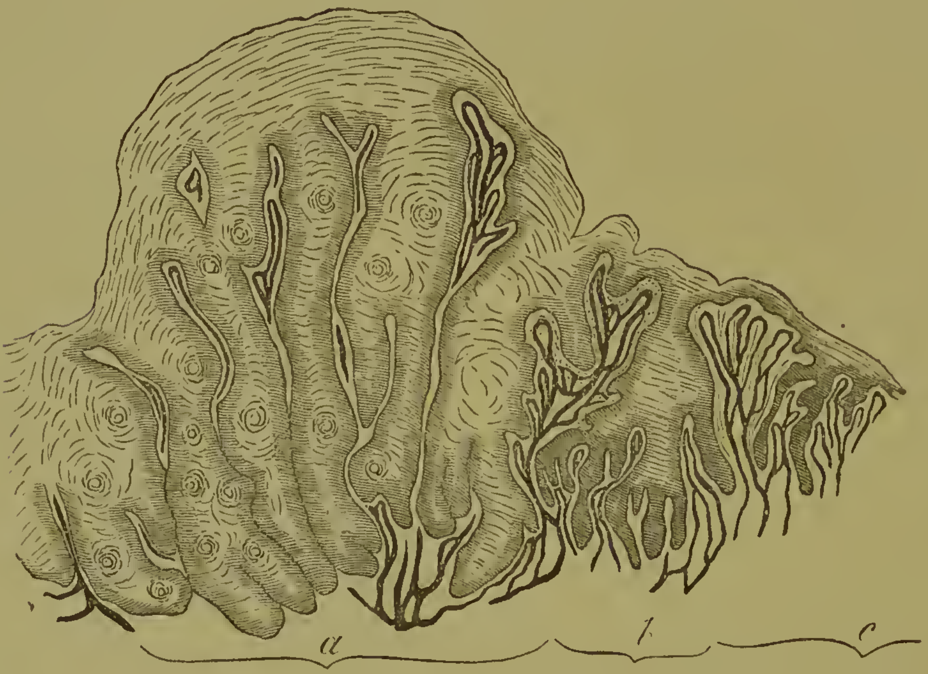
General Features.—This disease affects the face, especially the lower lip, the scrotum (constituting chimney-sweeper's cancer), the vulva, prepuce, the glands of the groin, and rarely the anus. The earliest sign is a little hard lump under the skin, say the lip; it is flattish, hard, somewhat tender, and increases in size, so that the lip "pouts;" the surface of the swelling may be somewhat pale or dusky, but it soon becomes slightly moist; at other times it is covered by a dryish scab, or an attempt is made at "papillation;" it may be in some cases fissured. The tissues around the swelling become more or less indurated, though they do not exhibit any evidence of change upon the surface. Ulceration now sets in in the shape of a little central excoriation or abrasion, and this runs on to distinct loss of substance until an actual ulcer is produced, which has an eaten-out appearance. The typical ulcer is roundish, and bounded by hard, indurated, sinuous edges, which in an advanced stage are everted and undermined, in consequence of the extension of morbid action; the base of the ulcer is dirty or greyish, more or less papillated; it may be reddish and discharge a thin fluid, or be disposed to scab over. In cancer of the *scrotum* the development of the papillæ is peculiarly marked. The disease in this situation commences as a small pimple or nodule, or warty excrescence, which remains in a quiescent state without undergoing much change for some little time; it then becomes irritable, red, tender, excoriated, and gives exit to a slight moisture, and is perhaps slightly scabbed over; the moisture increases, sometimes to such a degree that it is "a thin acrimonious ichor, which excoriates the surrounding skin." Very often other nodules appear and coalesce with the primary ones; ulceration now sets in in reality, the edges of the ulcer become everted, and throw out a luxuriant growth with scirrhous hardness, which growth moreover is accompanied by a discharge of very fœtid, irritating matter. The progress of the disease is accompanied by the hypertrophy of the papillæ, so that by-and-by—very early sometimes—the disease looks like a "fungous cauliflower excrescence;" and this sprouting in connexion with ulceration after a while extends deeply into the tissue.

Morbid Anatomy and Pathology.—On section, in an early stage, the mass of an epithelial cancer looks of a greyish aspect, tinged occasionally with yellow; at the circumference, the boundary of the disease is well defined; there appears to be special stroma; what there is of stroma is formed by the tissues of the part; beneath the papillary layer the surface is uniform, grey, shining, and close-textured; generally, the mass yields a slightly milky juice, and sometimes a semi-fluid cheesy material may be scraped from off it. In the scrapings from the surface of the cancerous mass the following elements, some or all, are discoverable:—

(*a*) Epithelial cancer-cells, which are nucleated, flattened, round, or ovalish, seldom regular, often angular in outline, and with processes: with granules clustering around the nucleus, which exhibits occasionally nucleoli, but generally granules; the cells range in size from $\frac{1}{200}$ to $\frac{1}{2000}$ inch, the nucleus on an average is $\frac{1}{3500}$ inch in size; (*b*) nuclei about $\frac{1}{3000}$ inch, free or imbedded in a homogeneous blastema. These are found in the youngest part of the tumour. On advancing to the older parts there are found (*c*) brood- or mother-cells, containing a varying number of nuclei in different degrees of development; the brood-cell is said to present a concentric arrangement, this being brought about by the continuous enlargement of the nucleus until its outer wall comes into contact with that of the parent-cell; and lastly, where the cells have been pressed together, especially towards the central or oldest parts of the individual nodules; (*d*) what are called globes épidermiques, or laminated epithelial capsules, said to be diagnostic: they vary in size from $\frac{1}{100}$ to $\frac{1}{500}$ inch; they are produced by the aggregation of successive layers of epithelial scales, curled one around the other, like a ball; hence they look like fibrous tissue having a concentric arrangement: they contain granular matter, with tolerably visible nuclei.

The mode in which the above-described elements are arranged, and the exact way in which cancer develops, has been much discussed of late. Some suppose—ex., Virchow—that the cancer cells take origin from the connective tissue. It is pretty clear, however, that they arise as a consequence of the abnormal development of the epithelial tissue. Thiersch and others, including Billroth, if I mistake not, hold that the epithelial cell-contents of the glands accumulate, together with epithelial cells that find their way from the rete above to the interstices of the connective tissue below: and that the two collections together form a cancerous nodule. Rindfleisch declares that if the edge of an epithelial cancer be carefully examined, the first thing noticed is a distinct enlargement of the sebaceous glands, which are extended into the tissues beneath in the shape of knotty projections, as seen at *b* (fig. 53), though at the same time he admits that projections from the deep portions of the rete which are situated between the papillæ—(the inter-papillary parts)—pass more or less deeply into the cutis, forming cell collections that fill alveoli formed by the normal tissues (see *c*, fig. 53).

FIG. 53.

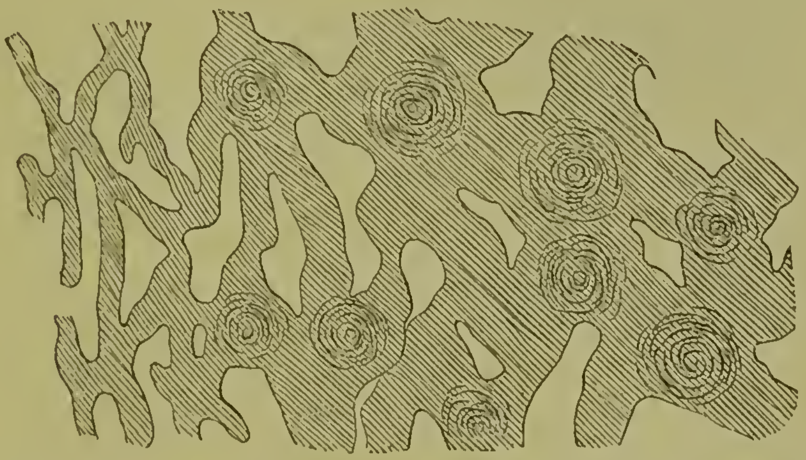


× 150. (After Rindfleisch.)

a. Tumour-like mass of cancer in full growth. *b.* An enlarged sebaceous gland. *c.* Commencing villiform projections of epidermis inwards.

Köster, who is the assistant to Recklinghausen at Würzburg, holds, in common with all other observers, that there is a stroma formed of the connective tissue of the skin, in which are embedded bodies of various arrangements and size, made up of epithelial elements. He declares, however, that there are two chief forms of cell collections—globular and cylindrical masses. In either of these the "globes épidermiques," or "cancroid pearls," or "onion-like bodies" may be found. They are, however, often lacking, and then the cylinders consist of smaller, more succulent, polygonal, flat, or cylinder cells." Köster adds, that "cuts into the youngest part of the tumour—viz., the periphery, afford generally the appearance described." He further affirms that "the cancer bodies are not isolated in the connective-tissue stroma, but generally connected so as to form a network;" and he concludes that this arrangement is in reality due to the stuffing of the lymph vessels by epithelial cancer elements, the network itself being formed by the lymph vessels, the cancer-growth originating from the cells of their epithelial lining, and the cylindrical disposition being explained by the filled network of lymph vessels—the cylinders being altered lymph vessels and their contents, as represented diagrammatically in fig. 54.

FIG. 54.

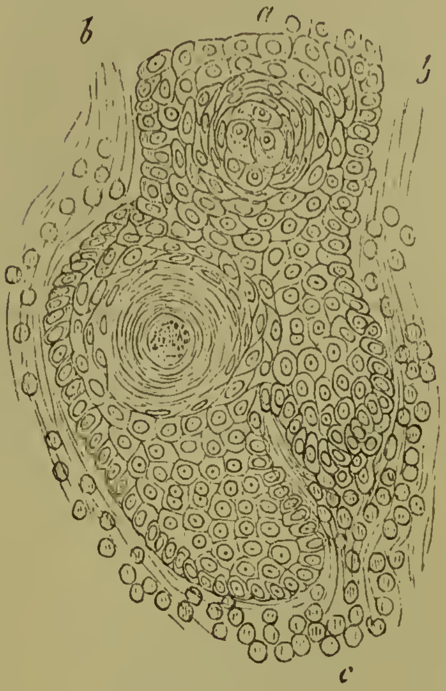


Horizontal section through the zone of development of an epithelial carcinoma of the skin, showing the exposed extension of the epithelial projection in the system of lymph-vessels. (After Köster.)

If a portion of this network be taken and magnified, the minute appearances of cancer cell and globes épidermiques enclosed in a vessel are observed: and they are thus represented by Köster (see fig. 55). At the outer part of this structure are ordinary oval or angular nucleated cancer cells $\frac{1}{200}$ to $\frac{1}{2000}$ inch, and in the interior brood-cells and in the centre the globes, or onion-like bodies—in fact, the same structures before described as being found in the scrapings from a cancerous tumour.

Now Rindfleisch affirms that the disease *extends* by infection of the lymphatics secondarily, but does not originate thus; whilst Köster argues that the disease *originates* not in the connective tissue (as Virchow believes); not in the sebaceous glands in conjunction with projections of the rete into the cutis (Thiersch); but by a change in the endothelium of the vessels alone, without participation of the connective tissue. Köster* drew his conclusions from a careful examination of some forty morbid specimens.

Fig. 55.



(After Köster.)

A portion of a cylinder of epithelial cells magnified 500. *a.* Cylinder with the cells and a young and old globule (union-like body). *b.* Stroma, rich in cells at *c.*

According to some, then, epithelioma takes origin in abnormal growth of the epithelial tissue of the skin: according to others, in cell growth in and about the sebaceous glands and the inter-papillary portions of the rete; but according to Köster from the endothelium of the lymphatics.

Etiology of Epithelial Cancer.—In 90 per cent. the disease attacks men, and in about 90 per cent. of cases the lower lip; the disease is not common till after thirty, and its most usual time of occurrence is about the age of sixty. Of 222 cases collected by Paget and Hutchinson, 207 were those of men, 25 women, and three of the latter are known to have been smokers. The average duration of life in epithelial cancer is somewhere about four years, when it attacks the cutaneous surface.

The Diagnosis.—Epithelial cancer is likely to be confounded, when seated in the face, with lupus, syphilitic ulceration, rodent ulcer, and unhealthy sores about the mouth.

Its occurrence in late life, its seat on the lower lip, its papillary ulcer, with everted, hardened, undermined edges, and the implication of the glands, are guides which prevent our being misled, as a general rule, as regards the similarity to syphilis. In *cancer*, the "sore is attended by more induration than are syphilitic sores; it is usually single, while the latter are mostly multiple; it causes enlargement of the glands, which tertiary syphilitic affections rarely do." In *syphilis* the history of the disease, the absence of the peculiar edges of the cancerous sore, the early age oftentimes of the patient, signs of syphilis elsewhere, and the seat away from the lower lip, will generally guide correctly. *Lupus* is a disease of young life, and can scarcely be mistaken for cancer. *Rodent ulcer* occurs between the ages of fifty and sixty, but has never yet been seen to attack the lower lip; it occurs somewhere about the upper part of the face, near the eye: it is slow in progress, has no tendency to affect the glands, and possesses no everted and no undermined edges; its surface is not foul, papillary, but clean, and does not give exit to any ichor. It however is probably only another expression of cancer.

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* Die Entwickelung der Carcinome und Sarcome, von Dr. Karl Köster. Erste Abtheilung: Krebs der Haut (Epithelialkrebs) Alveolarer Gallertkrebs des Magens. Mit 4 Tafeln Abbildungen. Würzburg. 1869.

The *Treatment* of epithelial cancer is summed up in one word—removal by the knife or by caustic: or both conjoined, which is the better mode of treatment, and the employment of a thoroughly tonic plan of general treatment. (See Formulæ 16, 17, &c.)

RODENT ULCER.

Rodent ulcer has been called cancerous ulcer of the face, cancroid ulcer, ulcus exedens, *noli me tangere*. It has been pretty generally regarded of late as essentially a fibroid ulcer, but there are those who believe it to be cancer. Sir Benjamin Brodie remarks, in reference to it, in his "Lectures on Pathology and Surgery," p. 333: "A man has a small tubercle upon the face, covered by a smooth skin; he may call it a wart, but it is quite a different thing. On cutting into it, you find it consists of a brown solid substance, not very highly organized. A tumour of this kind may remain on the face unaltered for years, and then, when the patient gets old, it may begin to ulcerate. The ulcer spreads slowly but constantly, and if it be left alone it may destroy the whole of the cheek, the bones of the face, and ultimately the patient's life; but it may take some years to run this course. So far, these tumours in the face and these ulcers are to be considered malignant. Nevertheless, they are not like fungus hæmatodes or cancer, and for this reason, that the disease is entirely local. It does not affect the lymphatic glands, nor do similar tumours appear on other parts of the body." The disease usually attacks some part near the eyelids; it is of slow progress; there is little pain. The disease has been described as commencing as a "pimple," "a blind boil," "a small hard pale tubercle," "a little long cut;" which tends to scab after a small central crack makes its appearance. There is in fact a small pimple followed by a minute ulcer. The disease extends gradually in all directions, but very slowly. When an ulcer forms, the edge is indurated and raised, but not undermined and everted; and there is no infiltration of the surrounding healthy structures. The surface of the ulcer is dry, clean, glossy, and does not give exit to any foul secretion; it is irregular in form, more or less oval, however. Mr. Paget says it is not warty nor granulated, and there is no upgrowth as in cancer. If a section be made, it is firm, pale grey, and fibrous.

The late Mr. Moore noticed an important point in regard to the extension of disease. In rodent ulcer it is equal in all directions; in epithelioma the growth tends downwards, and in two ways—partly, it is said, by transfer of morbid material to the glands in the cervical region, and partly by its more rapid growth on the side nearest the central organs of the circulation—that is, the line of transit to the heart. This Mr. Moore illustrates by the results of operations where, in removing a tumour, he cut through the œdematous tissues on the distal side, and the apparently healthy structures on the proximal side; and the disease returned in the latter and not in the former spot (suffering from impeded circulation). This is of importance in relation to operations.

The disease differs clinically from the ordinary progress of cancer by its greater slowness, the little pain and hæmorrhage, the absence both of any attempt at the formation of a fungoid growth, and of fœtor. The glands, moreover, are never affected. The ulcer may cicatrize, but the ulceration again breaks out in the locality of fresh deposits. The advances of the deposit and ulceration are unequal, hence the eaten-out or rodent appearance. The ulceration advances not only in extent, but in depth also, the cartilages resisting the most of all the tissues. The growth is always in one mass, not in distinct centres. To Mr. Jonathan Hutchinson and Mr. Moore we are specially indebted for a complete summary of all that is known of the disease. The microscopic characters are as follows:—An excessive growth of the fibro-cellular structure, well defined, firm, and greyish, mingled with fatty tissue, free fat, epidermic structures, exudation-cells, some of which are flattened and curled together somewhat similar to the globes épidermiques of epithelial cancer. Mr. Paget states that no true cancerous elements are present, but Mr. Moore affirms that he found elements like those of epithelial cancer present.

There is one peculiar difference in the behaviour of the deposit in scirrhus and rodent ulcer. The growth in the former possesses contractility by which the relation of the surrounding parts is altered. That of the latter does not, so that the yet undestroyed parts keep their position. The same writer remarks that though there is no true implication of the lymphatic glands, they may occasionally acutely inflame or suppurate, but are never permanently indurated.

Rodent ulcer then occurs on the face, has an indurated edge, a tendency to spread without respect to kind of tissue, is of slow progress, painless, is not related to any cachexia, never causes enlargement of glands, and microscopically presents characters that betoken it as the least expressed form of the cancerous cachexia. It is most common between fifty and sixty, and it does not occur before thirty; generally it has its seat about the eyelids, and occurs in either sex equally, and it never attacks the lower lip.

Pathology.—I have mentioned several important points in the above description bearing upon the nature of the disease, especially as regards its allianee with cancer. Mr. Moore, to whom I refer so much, and who wrote an admirable book on the subject,* inclined to the belief that rodent ulcer is not a fibrous degeneration, but a form of epithelial cancer, believing that as compared with cancer, rodent ulcer is composed "of a more feebly vital material," and therefore "the occasions are rare in which it imitates the cancerous character, by passing on to a subordinate lymphatic gland." Indications are found, he holds, in its microscopic history of the presence of cancerous (epithelioma) elements. This is, however, not the experience of other observers up to the present time. The comparative facility of extirpation is not regarded as an essential difference between rodent disease and cancer. The infiltration, too, of parts around the seat, or recognisable seat, of disease, is looked upon as a matter of degree: and so is the usual exemption of glands, upon which those who deny the cancerous nature of rodent ulcer lay the greatest stress, for we are told that "to look upon the power of infecting glands as essential to cancer, would be to confound it with enchondroma or tubercle, which do the same, or even with skin tattooed with gunpowder." Mr. Moore suggests that the explanation of the non-infection of the glands in rodent disease is to be found in the nature of the diseased material itself, which is incapable of growing when transplanted; and the attenuation of the natural textures, so that their absorbent activity is lessened, or there remains little material ready to pass to the glands.

"The rodent cancer is an exquisite instance of a local ailment, being almost uninterruptedly continuous in its growth, from the solitary pimple in which it originates, over an area of half the face. At the same time, however, that it has every local quality of cancer, it is so meagre a growth that it has no superfluous material for circulation in the blood to distant parts, and very little for the lymphatics and the textures nearest to it."

I have thus far only given the views of an English surgeon who paid particular attention to the pathology of the disease.

If I turn to continental observers, I find that they make no distinction between epithelioma and rodent ulcer. Indeed, Köster's observations upon Epithelioma apply equally to the two diseases. Mr. Hulke has recently recorded† the minute characters of several specimens of rodent ulcer, which plainly show the relationship that exists between epithelial cancer and rodent ulcer *quoad* histological features. He speaks in regard of one case of finding cells resembling those of the epidermal rete mucosum infiltrating the textures. "At the periphery of the hard edge and base they form cylinder and bud-like masses which intrude into the normal tissues underlying the ulcer," as exhibited in the annexed sketch which I made, and which reminds one of the figures of Köster, only that the cells are not pressed so closely together, forming the globes épidermiques.

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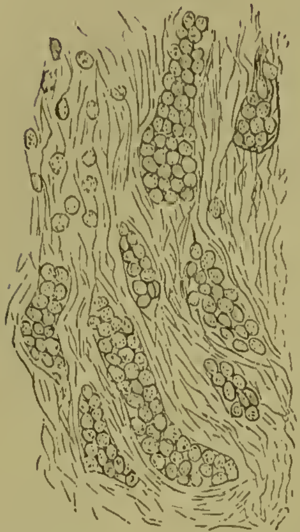
* Rodent Cancer.

* Path. Trans., vol. xxii. 1871.

Fig. 56.



Clinically regarded, the comparative slowness of growth, the non-implication of the glands, and the non-undermined edges would make rodent ulcer different from epithelioma: but the histological conditions, especially the fact that all the characteristic minute features of epithelioma have been found in the disease by excellent observers, tend to prove its identity with cancer, only that it is a less active phase of the disease.

Diagnosis.—"An ulcer with hard sinuous edges, situated on some part of the upper two-thirds of the face, of several or perhaps many years' duration, almost painless, and occurring in a middle-aged or elderly person of fair health and without enlarged glands, is almost certain to be of the rodent type." (Hutchinson.) The disease may be confounded with *lupus, epithelioma, syphilis.* Lupus occurs before the age of thirty, never after middle life, and always tends to heal. It begins as a pink, low, tuberculous elevation of the skin; rodent cancer has a firm, uncoloured nodule in it. In lupus there may be more than one tubercle, and the intervening skin may be healthy, or pink, or scaly, or œdematous; the pimple of rodent cancer, on the other hand, is solitary. The surface of lupus first scales or peels before it breaks; the rodent cancer excoriates, and then scales or bleeds. Both ulcerate; the lupus at one or at several of its tubercles, but the rodent cancer by the mere deepening of its central scabbed excoriation. Lupus may cicatrize and cease at any time; rodent cancer proceeds with at most but a temporary and partial healing near its edge. When both are far advanced, the lupus has a superficial appearance, though it have destroyed the whole nose; rodent is precipitous and excavated. Lupus possesses, rodent cancer is without any, contractility. The margin of lupus, though thickened, is low, and bevelled both outwards by œdema and inwards towards the shallow ulceration; that of rodent cancer is firm, and is commonly, in both directions, abrupt. The ulceration of lupus is smooth, and may be multiple, being divided by scars; that of rodent is single and rugged. In the vicinity of lupus there are separate, rather soft tubercles, and an area of pink, scaly integument; around the rodent disease the skin is healthy; and if a separate nodule do exist, it is compact, firm, and in great part subcutaneous. Lupus is not invariably limited to the face, but may at the same time appear on the hands or elsewhere; rodent cancer is eminently local and centrifugal." (Moore.)

Cancer in its more pronounced form occurs generally about the lower lip, rodent cancer never; in cancer the glands are affected, the general health is bad, the ulcer is moist and gives out an ichor, is warty more or less, its edges are everted and undermined, and the parts around are infiltrated by cancerous material, and it is of more rapid progress. *Syphilitic* ulceration is more acute, there is no indurated solid edge, there is pus formation, the ulcer occurs often at an early age, the origin is not from a "pimple," and the concomitants of syphilis exist elsewhere about the body.

Treatment.—The treatment is simple and satisfactory. Experience teaches us that extirpation by the knife, safe in the earliest stages, is the only successful mode of treatment: and it is effectual. Mr. Moore has lately shown that even in advanced and extensive cases the free use of caustics after as much of the disease as possible has been removed, is attended apparently with complete success. When once the diagnosis is made, the line of procedure is easy, and that is the accomplishment of speedy and complete extirpation. General remedies are of no avail whatsoever. But there are cases in which the disease has far advanced, and in which it approaches the eye, for instance, so closely, that one is afraid of operating, and if the disease is quiescent the practitioner may well hesitate. I have seen good results from large doses of iodide of potassium and iron where operative measures are inexpedient—even the arrest of the disease for a while. But such cases as those to which I now refer show the necessity for effective treatment of rodent ulcer at the earliest period possible.

CHAPTER XVII.

CUTANEOUS HÆMORRHAGES.

General Remarks.—Blood may be effused into the skin under a variety of circumstances. The occurrence may take place as an idiopathic condition *spontaneously*, as it has been termed: or *secondarily* in connexion with other diseases of the skin. The blood-vessels may be actually ruptured, and so permit the escape of blood, or the blood globules may escape bodily through the actual vessel walls. The usual cause of rupture is traumatic injury. The hæmorrhagic spots receive different names according to their size and shape. When they are small, in the form of red points, they are called *petechiæ;* when larger, and more or less linear, *vibices;* when large in the form of bruises, *ecchymoses;* and when the blood collects in the form of a distinct tumour, *hæmatomata* or blood cysts.

The *secondary* forms of cutaneous hæmorrhage occur in connexion with typhus, measles, scarlatina, and variola, the early eruptions of which may severally be more or less "hæmorrhagic," the hyperæmia being accompanied by actual hæmorrhage into the skin. The eruption of several of the ordinary inflammatory diseases of the skin also are sometimes complicated by a certain amount of effusion of blood; for example, in erythema papulatum: in lichen, forming *lichen lividus;* in herpes, in pemphigus, forming (sanguinolent) bullæ, and in connexion with the wheals of urticaria constituting *urticaria hæmorrhagica,* which is generally termed *purpura urticans.* Other conditions under which cutaneous hæmorrhages arise are altered states of the blood current, such as impurifications by bile products, stasis of the capillaries produced in connexion with kidney and heart disease, &c.

It is only to hæmorrhage occurring as a primary and independent disease that the term *purpura* is applied, and this I shall now describe.

Purpura. — The term *purpura* is often applied to certain secondary conditions above referred to, and some little confusion has thence arisen, but the name should designate a disorder which is independent apparently of specific poison, or of chronic organic disease. This disease *purpura* may be very mild or (rarely) very severe. In the former case it is called *purpura simplex,* in the latter *purpura hæmorrhagica.* It is characterized by cutaneous hæmorrhage, giving rise to spots, patches, or bruise-like discolorations of the skin; and in the severe form the hæmorrhage also comes from any or all of the mucous surfaces.

Purpura Simplex is most commonly seen in its early stage as a minutely fine eruption of pin-point-sized specks, of a pink or purplish colour, covering the skin more or less extensively, and accompanied by occasionally slight pyrexia. The eruption, which cannot be effaced by pressure, is especially apt to appear on the lower extremities, and it is usually most marked about the thighs and buttocks. In these situations there is sometimes a rapid aggregation of the specks into patches of irregular shape and size. After a few days there are intermingled with these, yellowish or buff-coloured patches, which are the sequelæ of the earlier eruptions—the hues left by the fading out of the darker discolorations. Sometimes the purpuric spots are seated at the hair follicles, or they occur in connexion with some lichenous papules (this is the lichen lividus of Willan). Some of the continental dermatologists describe a special phase of purpura under the term *purpura rheumatica* (or peliosis rheumatica), which is ushered in by rheumatic pains about the joints, and a rash-like erythema papulatum in different parts, which become the seat of purpuric effusions. But this is really only erythema complicated by hæmorrhage: the duration and course are those of erythema papulatum. Actual blood sweating will be described under the head of Chromidrosis.

Purpura Hæmorrhagica is purpura in an exaggerated form, taking the aspect in many places of irregular livid blotches: and accompanied by hæmorrhages from the various mucous surfaces, the gums, the mouth, the kidneys, stomach, intestinal tract, and the lungs, &c.

SCURVY has the same general symptoms as severe purpura, but it however can be readily distinguished from purpura, by the following characteristics:—1. It is always caused by privation of fresh vegetable food. 2. The gums are usually swollen, spongy, discoloured, and bleeding. 3. There is always great lethargy and prostration, and the skin is of a peculiar dusky, dirty-looking pallor. These features are not observed in purpura.

Diagnosis.—A purple eruption, then, which is not connected with the exanthemata, nor with chronic organic disease, and the history of which does not correspond with the characters of scurvy just given, may be safely set down as *purpura.* Another point of diagnosis still remains. In all forms of cutaneous hæmorrhage there is a gradual change of colour. First a more or less bright pink spot appears, which becomes in succession purple, brown, tawny, buff, and yellow. It never fades on pressure. Under these circumstances the spot at one time may look a good deal like a flea-bite, but it will be found to have no central puncture. The spots may be single, or aggregated into patches. They tend to appear fresh every day, or at short intervals. Under the use of fresh vegetable food the appearance of new spots is immediately checked, if the case be one of *scurvy;* but if *purpura* be the cause, this diet will quite fail to influence the progress of the eruption.

Treatment.—The cause of the disease must first be ascertained. Nothing need here be said respecting the management of cutaneous hæmorrhage occurring in the exanthemata, or in chronic organic disorder. If scurvy be the cause, the patient must be immediately furnished with fresh vegetable food, and good generous living. Lemon or orange juice, potatoes, cabbages, and lettuces are of especial value. The skin should be kept clean. The patient should be kept for the first few days in the recumbent position. No drugs need be given to him. The etiology of *purpura* proper is still but ill understood, and any treatment for it is therefore necessarily empirical. Turpentine, the perchloride of iron, and quinine have apparently produced the best results." (See Formula 167.)

CHAPTER XVIII.

NEUROSES OF THE SKIN.

Disorders of the nervous element of the skin come under this head. They are characterized by alteration in the sensibility, or by secondary structural changes. Now disorder of the nerves of the surface may be *secondary* to various morbid conditions, and so altered sensibility, itching, pain, and the like, are found in connexion with or parts of many general diseases implicating the nervous system, in local inflammations, and indeed skin affections generally; whilst structural changes, due to nerve-change, may be part of well-marked general disease, like elephantiasis. Nerve-disorder occurring under such circumstances is mostly secondary, and in one sense accidental; and is therefore described in connexion with the several affections in which it occurs. In other cases the nerve-disorder is the prominent, primary, and practically the sole disease—and this independent form of nerve-disorder will be described here.

The primary affections comprised under the head of neurotic cutaneous diseases are—

1. Increased sensibility, or hyperæsthesia.
2. Diminished sensibility, or anæsthesia.
3. Perverted sensibility, including pruritus and the like. The changes in the skin in prurigo are probably secondary to nerve-disorder (see prurigo).

It may be asked, Why not rank urticaria and herpes under the head of neurotic disease? For the present I have described urticaria as an erythematous disease, and herpes under bullous disorders; for though these cannot be produced without the agency of the sympathetic or cerebro-spinal nerves (and the excitability of the nerves, one or either set, is a *sine quâ non* as regards these two diseases), yet the nervous element is not the only one, though it is prominently involved in these diseases. And more information is needed about vaso-motor and trophic nerves before finally deciding where to group a good many diseases in the production of which nerves play an active part. If the meaning of the term neurotic be extended so as to admit herpes and urticaria it must include leprosy, in which nerve-disorder, that can be felt in the case of the superficial nerve-trunks, precedes the alteration in the skin, and is itself the consequence of the effusion of a special fibrinous material into the cellular structures generally.

Hyperæsthesia, or exalted sensibility of the skin, if general, is secondary to brain and spinal diseases; occasionally it is idiopathic, and when this is the case it partakes of the nature of an hysterical pain. The skin is morbidly sensitive to all impressions—ex., friction of the clothes, the air pressure, and even that of lying.

Anæsthesia is infinitely rare as a primary disease, if it ever occurs as such. It is practically a secondary symptom of other diseases, such as morphœa, atrophia cutis, &c.

Pruritus.—*General remarks.*—This is characterized by the occurrence of "itching;" in fact, pruritus is itching. It may coexist with, or be entirely unaccompanied by organic change in the skin; and a knowledge of the conditions under which it occurs is very essential to the practitioner.

Pruritus occurs in the first place in the course of most inflammations of the skin—ex., lichen, eczema, prurigo, lichen planus, &c. An exception is found in the case of those local changes in the skin which occur in connexion with struma, syphilis, and the exanthemata. Pruritus occurs likewise in connexion with rheumatic manifestations: the circulation of morbid elements, as bile, urinary excreta: alterations of temperature, senile decay of the skin, gastro-intestinal disturbance, nervous diseases, Bright's disease, genito-urinary and uterine derangements, sedentary habits, and stimulating diet; it is also occasioned by *local causes;* about the rectum, by ascarides and piles, and over the body in various parts by parasites (animal or vegetable). When pruritus is spoken of in the abstract, itching, as constituting the primary and sole disease present, is signified, and the nervous character of the itching is frequently shown by its sudden appearance, its almost as sudden disappearance, and often its marked tendency to periodicity.

Pruritus may be general or local, and it is very generally followed by secondary changes in the skin. When general it is due to the causes of more general operation, mentioned above.

When pruritus occurs, of course in most cases the patient scratches more or less violently for the relief of the itching, and this induces certain special diseased conditions. These may be stated in general terms to be—an intensification of existing eruptions, and particularly inflammatory phenomena, when these are actually present before; excoriations, follicular congestion, ecthymatous pustules, furunculi, urticaria, some or all of these, &c. &c.—in fact the phenomena of a scratched skin (see p. 127) are produced, or what is termed a "*pruriginous eruption,*" (not *prurigo,* as it is often erroneously called. See Prurigo, p. 160.)

I need not enter more into detail as regards the aggravation of already existing eruptions, such as eczema, lichen, &c. But I wish to add a few words with regard to those cases in which pruritus exists in the first place as apparently the sole disease, and in which scratching is practised, and eruptions follow. I refer to pruritus connected with senile decay (pruritus senilis), and certain local varieties of prurigo—viz.: P. ani, P. scroti, P. præputii, P. pudendi.

Pruritus Senilis.—In old people whose skin begins to exhibit the atrophous changes described at p. 366 the sensibility of the skin is much disordered and more or less associated pruritus occurs. Now, in some instances the practitioner is consulted for this pruritus, and at first there is nothing else to be observed in the skin but laxity and thinness of the integuments, with perhaps plugging up of a certain number of the follicles by the exuviæ shed from the sebaceous glands. The pruritus is the evil from which the patient desires to be rid. It is increased by heat, cold, the warmth of the bed, by digestion, and other things. These cases may be relieved by the use of alkaline baths, free oiling of the surface, or anodyne applications, such as a digitalis lotion (Formulæ 51, 56, 64), or a weak solution of detergent solution of tar; at the same time the state of the general system must be toned up by iron, quinine, and the like. But after awhile the scratching practised to relieve the irritation induces the development of distinct eruptive phenomena. A certain amount of hyperæmia occurs, and this is followed by the formation of lymph papules, which being scratched, become pruriginous—that is to say, the apices are torn, a little blood oozes out, and dries on these apices as a dark speck. These changes are followed by more or less infiltration of certain parts, by the intermingling of excoriations made by the nails with the pruriginous rash, and in some instances by ecthymatous pustules or urticaria. The pruritus is often intense, and takes the form of a stinging, creeping, or burning sensation. The pruritus is the primary, as it is occasionally the sole condition. The disease may be, of course, more or less general, or more marked in one place than the other.

It will be seen from the above description that this malady of the aged consists in pruritus, together with, in addition, the effects of scratching, which naturally vary in degree and extent. This pruritus senilis must be distinguished from phthiriasis, though in some cases the exciting cause of the pruritus may be pediculi; but when the latter are present the eruption is peculiarly limited in the first instance to the shoulders, and the parts about the neck, and there are the peculiar hæmorrhagic specks present indicative of the attack of the parasites. (See Phthiriasis.)

I have this further observation to make, that in patients who cannot be regarded as "old," a condition like senile pruritus, with its consequences, may now and then, though rarely, arise. The pruritus is not directly the result of a decay of the skin, but of mal-nutrition, or of perverted innervation from worry, anxiety, or over headwork, or the like.

In those cases in which eruption follows the pruritus, it is all the more necessary to adopt a soothing plan of treatment. If the practitioner employs stimulants freely, or irritants, he is only in reality adding fuel to fire, because he is irritating an already irritated skin which is not produced by any local cause which his local stimulating remedies can remove: whilst soothing measures are needed to allay the pruritus, which itself leads to eruption secondarily. But then the diagnosis of idiopathic pruritus must be correctly made.

This pruritus senilis above described, is one of the items that have been included under the term prurigo senilis. Of course in those cases in which pruritus is set up by general causes—ex., the circulation of bile products, a similar state to that just described exists—viz., pruritus and a scratched skin; but then the atrophous skin is absent, and the origin of the pruritus cannot be traced to the atrophy.

The cure of pruritus senilis is to be effected by emollient and vapour baths, and anodynes, locally applied (see formulæ referred to below).

Pruritus Ani.—Itching about the anus arises from a variety of causes. It is a common consequence of piles, ascarides, tinea circinata (eczema marginatum), the friction of the parts in stout people (intertrigo), gout, and uterine disorder. It occurs from the latter by reflex action. It is sometimes abominably troublesome. The result of scratching is to give rise to the development of papulæ, and it may be, considerable inflammatory thickening.

The practitioner must of course discover any local cause for the disease, and take care to negative its operation. In cases of pruritus from intertrigo, I know nothing better than the continuous application of the unguentum plumbi co. of the old Pharmacopœia (Kirkland's neutral cerate). This ointment should be spread thinly on rag, which should be kept in close contact with the affected parts, and so that these latter cannot rub the one against the other. In those instances in which there is very much induration, I have found the same plan of treatment, followed by the use of a weak sulphuret of potassium lotion, beneficial, provided the general health be carefully attended to (see formulæ quoted below).

Pruritus Præputii is merely itching about the glans, connected with an abnormal secretion from the follicles of that part. The remedy is free washing with soap and water and the application of an oxide of zinc powder or lotion (see Formulæ 40, 72, 88, &c).

Pruritus Pudendi, or itching about the genital parts, is common in women, and arises from a variety of causes—eczema, intertrigo, the presence of vegetable fungi, ovarian and uterine irritation, hæmorrhoids, and varicosity of veins of the genital parts. In those cases in which there appears to be no structural change, relief is to be obtained by the locally applied anodynes, care being taken to treat any uterine or ovarian disease appropriately.

A number of topical applications will be found in the Formulary (see Nos. 37, 38, 44 to 59, 76, 88, 92, 117, 131 to 137, &c.).

CHAPTER XIX.

CHROMATOGENOUS DISEASES, OR ALTERATION IN THE PIGMENTATION OF THE SKIN.

General Summary.—In speaking of maculæ under the head of elementary lesions, I briefly indicated the various kinds of discolorations in the skin. I have now to treat, in greater detail, of those which are caused by alterations in the pigmentation of the skin.

Pigmentary discolorations may be divided into three main groups—(*a*) primary and idiopathic, (*b*) secondary or symptomatic—that is to say, pigmentations resulting from other diseases—and (*c*) congenital.

(*a*.) *The primary or idiopathic pigmentations* result from the application of irritants, which set up hyperæmia in some cases and in others not—as after the action of heat, or friction, or irritants—ex., mustard plasters, or the pressure on a part, as by dresses, mechanical restraints, the friction of straps, and the following of certain handicrafts by which certain parts of the body are exposed to the sun or specially rubbed, as in masons. Scratching also will be followed in some cases by discoloration—this is seen in phthiriasis particularly. Hebra has well said, in regard to the occurrence of tanning in exposed parts, in bricklayers, stonemasons, coachmen, sailors, soldiers, vine-dressers, &c., "It is precisely this localizing of the colouring, and its being bounded by those parts which as a rule are covered, that distinguish it from the varieties occasioned by internal causes; for instance, change in the sexual organs. It must not be forgotten, that in those people who tan, there is a peculiar disposition to pigmentary deposit—a disposition exhibited by healthy people." Now, according to the cause of the maculations, divisions have been made of idiopathic stainings into traumatic, toxic, and caloric maculæ; but this is an unnecessary subdivision. These idiopathic stainings are generally localized to particular parts, and will be described in detail presently, after I have concluded this general summary.

(*b*.) *Secondary or symptomatic stainings* are those which follow in the wake of other diseases, or are due to disturbance of organs at a distance from the seat of discoloration, or, as I prefer to put it, that do not constitute the essential disease, but are secondary to, or form only a part of, the essential disease present in any given case There seem to me to be three groups of secondary pigmentations:—1, those which follow in the wake of and occur in the same seat as certain skin eruptions; 2, physiological pigmentations connected with uterine functional changes; and 3, pigmentations occurring in connexion with certain cachexias, the latter being associated with definite organic diseases of important internal organs. As regards the first of these groups, I may say that pigmentary discolorations occur chiefly after eczema—especially when the legs are attacked and there are varicose veins—here the blood is retarded so as to furnish ample material to stain; after psoriasis, in slight degree; after lichen planus; after and coincident with all forms of syphilitic eruption, and after so-called eczema marginatum—really tinea circinata of the fork of the thigh and buttocks. Of course in all these cases there is present the history of the several diseases to guide as to the cause. The seat of the discoloration is some guide, however, as to the nature of the disease, for the discoloration of the lichen planus is situated on the front of the fore-arm, about the flanks, and the side of the belly; that of "eczema marginatum" about the fork of the thigh; that of psoriaris, on the outside, and that of eczema, on the inside of the arms, &c. A careful consideration of the seat and extent of discolorations localized in the site of existing or recent eruption often helps towards forming a correct diagnosis of the disease which has caused it. It is in regard to the diagnosis between chronic eczema, psoriasis, and syphilitic eruptions that this staining sometimes acquires importance. Students are, however, apt to attribute too much importance to staining as *in itself* evidence of syphilis. In a case of well-developed syphilitic eruption, the staining—coppery tint—is not needed for diagnosis, the character of the eruption as to shape, form, and composition being so much more valuable and conclusive. It is in fact not in typical but in undeveloped forms of eruption that staining is of value as an aid to diagnosis, and especially as indicative of a syphilitic taint modifying non-syphilitic diseases. But the fact of excessive staining or coppery-tint is no evidence, *per se*, of a syphilitic taint, especially in connexion with eruptions of the leg; for here the most marked discoloration may occur in connexion and as a consequence of long-continued congestion helped out and kept up by gravitation, want of tone in the tissues generally, and varicose veins. Where gravitation comes into play, staining or maculation of a marked kind goes for nothing. But there is this exception—that where there is no varicosity, and the maculation occurs high up near the knee without sufficient cause—ex., hyperæmia—to account for it, it is suspicious of a syphilitic taint; and this leads me to mention the rule I observe in estimating the value to be attached to mere dark discoloration as a diagnostic test, in situations where gravitation does not come into play, of syphilis. Whenever there is staining out of proportion to what is generally seen under the particular circumstances present, and out of proportion to (that is, unexplained by) the amount of hyperæmia or tissue change, and emphatically when it is an unusual feature of an eruption which is evidently modified as to its general characters, the modification consisting of a tendency to greater change or fibroid deposit in the deep parts, whilst the surface alterations are less marked than usual—ex., discharge or scale-formations, is less abundant—then the existence of a syphilitic taint may be suspected. This is an excellent practical guide.

But I pass to consider secondary pigmentations of a physiological character. Hebra classes them under term "Chloasma uterinum." These stains are seen about the forehead, the mammæ, the linea alba, the cheeks, and so on, in pregnant females. They are never observed before puberty. They occur in connexion with diseases of the sexual organs, though not necessarily do they occur under these latter conditions. They are not observed in females after the climacteric period is over.

Lastly, I must note pigmentary discolorations in association with certain cachexias—to wit, syphilis, malarial fevers, Addison's disease, and cancer, and leprosy, giving rise to an "earthy hue" in the first, a yellow or chestnut-brown in the second, bronzing in the third, a sallowness in the fourth, and a dull reddish-brown in the last. I will just venture one additional remark or two under this head. The staining of syphilis is a very valuable guide indeed when it occurs about the face. The syphilized subject has a very anxious look, a pinched and tanned look about the root, sides, and upper part of the nose, whilst the brownish stains are marked more or less on the forehead, about the cheeks and mouth, just below the eyes, and at the side of the face. The conjunctiva may be all the while furnished with a fair or even good supply of red blood. This physiognomy of syphilis is soon learnt, but it is difficult to describe in accurate detail.

(*c.*) As regards *congenital pigmentations*, I need only say these are seen in moles and pigmentary nævi.

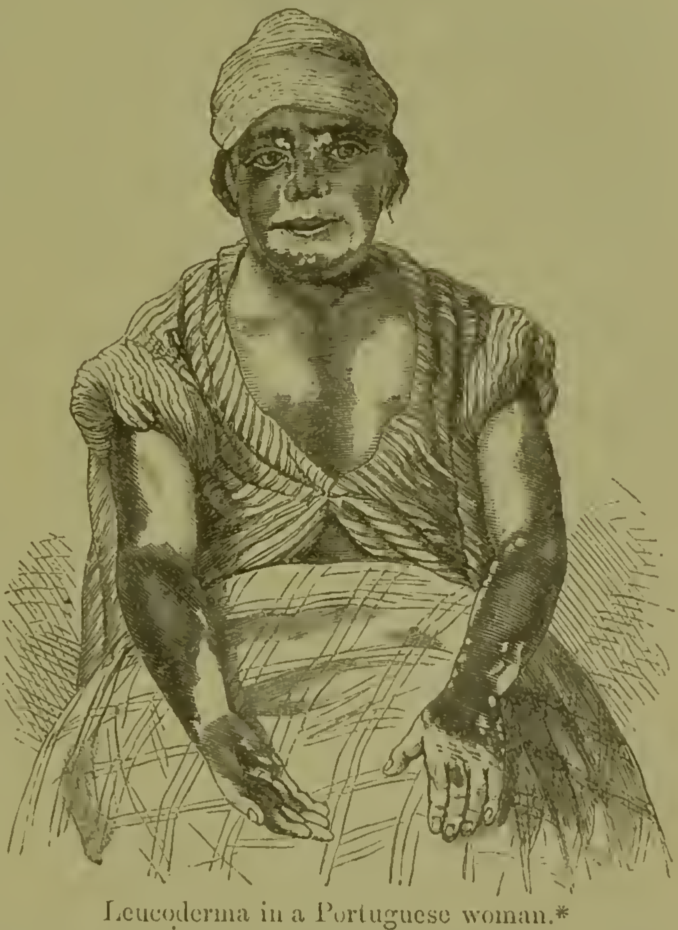
I have given the above summary with the view of furnishing a complete chart of pigmentary discolorations. Most of the components have been mentioned in connexion with the diseases of which they respectively form a part. I have however to say something further of certain of the idiopathic pigmentary affections which have not been described before, and which come under the first category in the preceding summary.

Those cases in which the pigmentation of the skin is at fault as the sole existing disease may be divided into two classes—(1)

Those in which the pigment is deficient in quantity (*Leucoderma*), and (2) those in which it is in excess (*Melanoderma*). These may be congenital or acquired, general or local. The seat of change is the rete mucosum.

Leucoderma.—This may be general or partial. The former condition is represented by the albino, whose whiteness is congenital. The physician has only to deal medically with the partial variety. Now, there are two conditions producing a partial whiteness. In one of these cases the pigmentation is deficient in one spot, but perhaps in excess at the adjoining part; that is to say, it is not equally distributed: there is no excess on the whole, nor deficiency, but an unequal scattering. In the other case the general surface of the skin is normally coloured, but there is an absence in some one or more parts locally. The former condition I have seen in young men who have been exposed to the sun in hot climates, and having had fever have returned to England; it is not very common. The latter variety—that is, true partial leucoderma—occurs especially in the black races, and consists of circular white patches, which have the effect of giving to the person in whom they occur a piebald appearance. (See fig. 57.) In leucodermic patches the hairs are often white. The only change in the derma is in the pigmentation. The derma is not structurally changed. Everything else is normal, save perhaps the sensation, which may be blunted. The extent of the patches, which may be round or serpentine, or in the form of bands, varies. The disease may cover the chest and back, white and dark blotches being intermingled; it occurs in youngish folk. I cannot but think exposure to the sun's rays has much to do with its production, deranging the pigment-formation in the skin.

Fig. 57.



Leucoderma in a Portuguese woman.*

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* From the Catalogue of the New Sydenham Society's Atlas.

Leucoderma is common in India, the well-to-do natives suffering from it, and the question that is put to the doctor for an answer is, 'Is this leprosy?" The hakeems are divided in opinion about it. But leucoderma, consisting of white patches without any textural alteration, has no relation whatever to leprosy. Dr. Farquhar's observations lead him to conclude that the fair-skinned individuals among the natives are most subject to this change of colour, and that leucoderma is very common about Peshawur, where the inhabitants have very fair skins, being for the most part immigrants or the children of immigrants from the fairer tracts of Central Asia.

Diagnosis.—The fact that there is simply deficiency of the pigment without other change, save an apparent accumulation in parts of the skin contiguous to the white patches, is itself diagnostic.

Pathology.—It seems clear that the disease may arise from depressed innervation. The action of the sun oftentimes sufficing to determine the occurrence of the disorder.

Treatment is sometimes successful. A nutritious diet, a course of tonics—arsenic, iron, or the mineral acids—the correcting of any of the ill effects of the action of malarial poison, residence in a cool locality, and avoidance of fatigue, generally conduce to improvement. Locally, the use of friction and cold bathing, with iodine baths, are the best remedies.

MELANODERMA.—This term of course means excess of pigment resulting in dark discoloration, but the altered tint of skin may be blue, yellowish, or black; hence the terms cyanoderma, xanthoderma, and melasma. Very short descriptions will suffice for these.

Melasma, or that condition in which the discoloration of skin is black in colour, is general or partial. The latter is generally called melasma. The general discolorations associated with—as secondary phenomena—particular general diseases, I have already referred to in the opening remarks of this chapter. The local variety, or melasma, I now notice. It may be a "physiological" condition, as seen in the staining around the nipple and the linea alba in pregnancy; this condition may be excessive. Dr. Swayne has described a case in which there was a peculiar discoloration about the face, arms, hands, and legs, which were spotted like a leopard. The same woman thus affected exhibited like phenomena in her skin during the last three months of her two former pregnancies, the discoloration disappearing after each confinement. The varieties of melasma are lentigo and ephelis. I will briefly describe them:—

Lentigo.—This is known as freckles. The seat of the pigment deposit is the rete mucosum: it is often congenital, and of varying extent and distribution; generally, however, it consists of round yellowish spots, the size of split peas and less, not only on the parts exposed to the light, but also those covered by the dress. Lentigo occurs in those with fair skins, and particularly red-haired folk.

There is no desquamation, no itching, and no heat of any kind in connexion with freckles, which often disappear after puberty. Freckles do not depend upon seasonal change. They require no treatment, except slight stimulation, and they may be in some degree removed by acetate of lead and sulphate of zinc ointments, and iodine lotions.

Ephelis (or *Sunburn*).—In this particular variety of discoloration the pigment deposit is excited by the sun's rays. Sunburn consists of little dots, the size of pins' heads, which appear upon the parts of the body exposed to the influence of the sun, and are seen mostly in lymphatic subjects with delicate skins. Treatment is of little avail. The best application is a bichloride of mercury lotion.

Melasmic discoloration likewise occurs as the result of the action of local irritants—ex. scratching, strong light, blisters.

PIGMENTARY NÆVI.—These consist of collections of pigment in the rete and corium, and a certain amount of hypertrophy of the papilla at times. They may be furnished with hairs. Moles are of this nature.

XANTHODERMA.—In this disease the pigmentary discoloration is yellowish. It is characteristic of certain races, and is due to some special condition of the colouring matter of the skin, molecular or chemical.

CYANODERMA, or blue discoloration, is different from coloured sweat. It is a curiosity, if not, at least in the greater number of instances, a hoax. A curious disease, called *Carate*, is described by Dr. Arcken as endemic in New Granada and the northern parts of America. It is declared to be diathetic, and characterized by the appearance of various colours on the body—dull white, copper, crimson, red, and dark blue. There appear to be three varieties—the simplest, *blue*, which is seen in persons between fifteen and twenty-five years of age, and consists of oval or roundish spots on the face, extending to the neck and lower limbs even; the *white*, occurring in individuals between the ages of thirty and forty, rare in males, and usually associated with ovarian disease: this is clearly leucoderma; and lastly, the *rose-coloured*, consisting of red points on the hands, face, and belly—a variety seen in both sexes. The disease is said to be due to bad living.

Pathology.—Mr. Wilson thinks that in melanoderma there is an anæmia of special features, accompanied by pigment deposit and change, due to debility of the nervous powers, and that the various colours are modified results. He notices especially, in reference to melanoderma a peculiar condition of eye—"the melasmic eye." It consists of "a vivid brightness and brilliancy and sparkling lustre of the eyeball, a liquid depth of colour of the humours of the eye, and a strongly contrasting whiteness of the sclerotica, the effect being often increased by a more or less deep tint of a dull blackness of the integuments of the eyelids, more especially of the fold of skin of the upper eyelid which immediately borders on the eyelashes." The non-production of pigment may arise from local destruction of rete mucosum, &c.; from want of nutritive power, as in leucocythæmia; and, on the other hand, an excessive production is brought about by *imperfect oxidation*—the carbon is not burnt off as carbonic acid; by the *imperfect elimination* of the carbon, in deficient menstruation, diseases of liver and kidneys, deficient hair-formation, during disease in pregnancy (leucocytosis present), and by *the excessive production*, from the use of highly-carbonized foods. Such are the causes given by Dr. Laycock. The above remarks apply to cases of true pigment-alteration.

The Diagnosis of these discolorations offers no difficulty; the colour of the skin is altered, and that alone.

Treatment.—This is generally that of anæmia. Sometimes there is excessive waste going on in the system; in that case the diet, the judicious use of stimulants, nerve tonics, change of air, mental rest, and the diminution of anxiety, are the points to which we should look for preventing depression of the nervous system, and for giving tone to the system. In this way both imperfect oxidation and deficient elimination are remedied. One other important thing to do is to see that the amount of red corpuscles in the blood is sufficient. I think that the deficiency of the red cells may be one factor in the causation of melasmic stains, and for that reason I use iron as a remedy against them. Then I am inclined to think that the action of the malarial poison on the system may tend to an abnormal production of pigment in the blood, so that in pallid neuralgic subjects large doses of quinine are called for. Though I do not think local remedies of any direct use in many cases, yet free ablutions, and frictions with the use of juniper tar soap as a stimulant, help the skin to recover its healthy condition. In certain cases, where the pigmentary staining is of limited extent, it may be removed by local measures. A very good application is that approved by Neumann—viz., a solution of bichloride of mercury, 5 grains to an ounce of water. A piece of lint cut accurately to exactly fit the discoloured spot is to be wetted continuously with the solution, but the edges are to be kept in contact with blotting-paper to absorb the excessive fluid which tends to collect at the sides of the piece of lint. This application should be made during two or three hours and then removed. The skin blisters and peels off. Other remedies—iodine paint, nitrate of mercury, acetic acid, and nitrate of zinc paste may be used with almost equal success. But in some cases the result is disappointment: the deposit of pigment recurs, and sometimes semi-keloid growths spring up in the induced scar, so that great care is needed in treating these cases.

CHAPTER XX.

PARASITIC DISEASES.

Parasitic diseases are those which are necessarily caused by the development and growth of parasites. They are divisible into two main groups:—A, *Dermatozoic* diseases, or those produced by animal parasites; and B, *Dermatophytic* diseases, or those induced by vegetable parasites. Of course, I do not now refer to the maladies connected with parasites found in the *interior* of the body.

The parasitic animal or vegetable having once found a congenial soil, grows more or less rapidly, and in so doing produces certain special results, which are diagnostic: and moreover certain epiphenomena or accidental superadditions in the shape of irritation of the skin, since in all instances parasites act in different degrees as local irritants in common with a host of other things. Examples of diagnostic lesions produced by parasites are to be found in the Acarian furrow in scabies, and the brittleness and disorganization of the hairs in the tinea. As instances of the epiphenomena, or accidental occurrences complicating parasitic diseases, I may refer to ecthymatous spots or urticaria in scabies or phthiriasis, and suppuration of the sebaceous glands in ringworm.

The several points above referred to I shall now deal with in detail.

A. DERMATOZOIC, ECTOZOIC, OR ANIMAL PARASITIC DISEASES.

The diseases that rank under this head are, scabies, or itch; phthiriasis, morbus pedicularis, or lousiness; the eruptions produced on the skin by the development in, or attack upon it of "bots," the chigoe, the dracunculus, the leptus, the flea, the bug, gnats, and the like. The acarus folliculorum will be incidentally mentioned under the head of acne. Of these, scabies, phthiriasis, and dracunculus disease alone require any lengthy explanation, but I shall first of all say a few words upon each of the others.

Flea-bites.—The flea (*Pulex irritans*) produces a little circular erythematous spot, which exhibits a dark speck in the centre, that marks the wound made by the insect. A certain amount of irritation is set up around the "flea-bites" in some cases, but this generally subsides rapidly, and all that is left is the minute dark ecchymotic point, smaller than a pin's head, which gradually dies away. The central hæmorrhagic speck surrounded by a small areola is characteristic of flea-bites.

BUG-ERUPTION.—The bug (*Cimex lectularius*, or *Acanthia lectularia*) produces hyperæmic papules which vary somewhat in size, according to the degree of swelling and irritation induced by the bug-bite. It may be possible to detect in the centre of the papule, which may be raised, circular and flattened like a *bouton*, a central, slightly red point indicating the wound inflicted by the insect, and under these circumstances the bug-bite may be not inaptly likened to a small rose-coloured wheal, the size of something less than a smallish split pea, flattened at the top, and with a central punctum. The parts about these bites feel hot, and they are tender, tumid, and irritable. The irritation soon subsides, together with the swelling, and a little indurated spot is all that exists after a day or two. Bugs may, according to my own conviction, founded on considerable experience, not unfrequently be the immediate excitants of the urticaria of children (lichen urticatus, see p. 125). The best treatment for bug-bites is the application of spirit lotion, containing a little bichloride of mercury.

A form of urticaria is said to be caused by the impaction upon the surface of the little hairs of some of the larvæ.

Certain caterpillars, if they get upon the skin, may excite urticaria also. This recently occurred to a well-known physician from sitting under the trees in the square not a hundred yards from my own house. Some of the numerous caterpillars, which I saw in numbers about the trees, got upon his neck, and as he said, nearly drove him wild. The eruption was urticarial in character. It can be relieved by such a lotion as No. 49 in the Formulary.

BOTS.—The skin, especially in the South Americans, may be the seat of the development of the œstrus, the "bots," or "gadfly," as it has been variously termed. The larvæ burrow under the skin, giving rise to "circumscribed furunculoid tumours," the size of a nutmeg, and these tumours appear to give exit by a small aperture to a sanious discharge. Presently these boils open and leave ulcers behind. In a case reported by Dr. Duncan, there was "a little lump at the back of the neck, which slowly changed its position in various directions, then a hole opened over it, and a worm was squeezed out." Two or three similar occurrences took place. It appears that the patient (a girl) had herded some cows in Perthshire. The larvæ were those of œstrus bovis. Dr. Spence has recorded similar cases as occurring in Shetland. "The larvæ occur in exposed parts of the body, and in those who are loosely dressed." The disease is essentially characterized by the presence of little painful lumps, which shift about; a little red ecchymotic line marking the track of the insect. The parasite is the œstrus bovis, belonging to the order Diptera.

CHIGOE DISEASE.—The *Pulex* or *Sarcopsylla penetrans*, or chiggre, is a common cause of disease in the West Indies. The chigoe attacks the feet and hands, entering the skin beneath the nails or betwixt the toes, either by a channel made for itself, or by the ducts of the skin; it takes an oblique direction under the epidermis, and its track is said to be traced as an "elongated brown spot." As the insect gets deeper, this indication of the route taken by it is lost.

> "The hands and feet of the parasite then become hidden beneath its own stomach, which enlarges rapidly, the upper part alone of the insect being perceptible through the epidermis, under the form of a milk-white spot. This spot enlarges considerably daily, until it looks like a large freckle, insensibly meanwhile changing its milk white colour to a pearly grey. By the time the animal is ready to deposit its eggs, it has become, says Dr. Guyon, *literally all stomach*, and this period may be known by the ashy-grey colour of the eggs, which are visible through their transparent envelope. The eggs now come forth one by one with astonishing rapidity, following each other through the layer of the epidermis, which reopens for them the passage previously made by the entrance of the parasite. The departure of the eggs brings to a termination the existence of the insect. It then perishes, attached entire, head, feet, and stomach, to the epiderm which had enveloped it, and with which it is carried finally from the individual in whom it had fixed itself. The best time for extracting the insect is just before the emission of the eggs; if they are left to be hatched beneath the skin, great irritation and painful sores are sure to result."

The treatment of chiggre-disease consists in dilating the original channel of entrance, and carefully removing the chigoe bodily.

THE GUINEA-WORM DISEASE.

This disease is due to the presence and growth subcutaneously of the Dracunculus, or Filaria Medinensis. It is found only in certain tropical parts, chiefly of Asia and Africa, and not in cold climates. The chief places where it is found are Senegal, Gaboon, the East Indies, Bombay, Persia, Arabia Petræa, the shores of the Ganges, Upper Egypt, Nubia (especially about Sennaar, Kordofan, and Darfur), Guinea, and the Gold Coast. It has also found its way to Grenada and the Island of Curaçoa. It has been met with not only in man, but in the dog and the horse. It is much more prevalent at some times than others, especially in wet and rainy seasons, and after inundations, when it occurs almost as an epidemic.

According to recent observations, it is rendered probable that some of the microscopic filaridæ or tank-worms, as Dr. Carter styles them, gain access to the skin, and there develop into the Filaria Medinensis. These worms are found in stagnant waters of pools and swamps, where the disease is endemic.

At the time of entry into the body, filaridæ are about $\frac{1}{3300}$ of an inch. The average length of the full-sized worms is eighteen inches; it may be much greater—three or four feet in the African species. The worm is milk-white, cylindrical, slightly flattened laterally, and tapers towards either end. It is about one-tenth or one-fifteenth of an inch in thickness.

The Mode of Attack.—When the worm is very minute it finds its way, as before observed, to some part of the surface, generally the bare feet, and "bores" its way deeply into the skin, where it takes up its abode. It grows for six months or so, in a perfectly quiescent state, as far as the patient is concerned, and this is termed the "latent period," till it reaches a length of from six inches to two feet or more, half or two-thirds of a line in thickness, and looks like a bit of whipcord, pointed at either end. When it reaches a largish size, the worm begins to make its way to the surface, its head coming to the surface first. It then sets up local irritation, and a species of boil appears: this breaks, and the worm protrudes; a good deal of irritation of the general system follows, and the sufferer is disabled for a while. The worms have the power of travelling from place to place over the body. It is generally felt under the skin as a "cord."

The Particular Part of the Body Attacked.—In the vast majority of cases the lower extremities are the seat of guinea-worm disease, and generally it is the barefooted natives who are attacked. About 1000 cases have been collected together by a writer from the Indian journals, and in more than ninety-eight per cent. the worm was found in some part of the lower extremities, and in the largest proportion about the feet and the ankles. Exceptional conditions are readily explained either by the migration of the worms, or by other circumstances. The water-carriers, or Bheestees, in India, who carry a "mushuk" or leathern bag suspended from the shoulders, according to Ninian Bruce, are very subject to the guinea-worm in those parts which come in contact with the mushuk. Of 300 cases noted by Dr. Horton, in 206 the disease was in the feet.

The Immediate Source of the Cause.—Much difference of opinion has been held in regard to the source from whence the guinea-worms are derived. Two things are nowadays accused as the real producers of the mischief:—1. The soil and the pools; and 2. The drinking water of the localities where the disease is found. If the drinking water contained the worms, these should be found in the stomach and adjoining parts, and distributed over the body, which is not the case; besides, the disease occurs in persons who drink water of the very best kind, and in those who never take it at all.

There seems little reason to doubt that the worm finds its way almost invariably—practically always—direct from the ground to any unprotected part which is brought in contact with it, and, in virtue of its boring properties, it effects an entrance in that part. The leg is the part usually unprotected and exposed, and the frequency with which the leg is affected points to this view as the correct one. Then, where are the worms originally found? They would seem chiefly to abound in stagnant pools and swampy places, for there is a large amount of evidence to show that bathing in or tramping barefooted through ponds and pools where tank-worms and creatures of a similar kind exist, is followed by the development of guinea-worm disease. Dr. Carter has given valuable evidence on this point, and so has Dr. Balfour, in his health report of the Secunderabad troops.

The entrance of the worm into the skin of the backs of water-carriers is explained in a similar way. Sleeping on the ground bare-skinned would suffice to give the disease. It has been stated that Europeans are not subject to the attacks of the dracunculus. This is altogether a mistake. The comparative immunity of Europeans is to be ascribed to the fact of their feet and legs being protected by proper coverings. It is the experience of those who have seen much of the disease that when Europeans adopt the habits of natives and go shoeless, they are equally liable with the natives to be infested by the dracunculus.

Treatment.—When the worm has lodged itself in the body for several months, as before stated, it makes its way to the surface, and should then be seized and traction gently made upon it; as much as will come forth readily, should be bound round a stick, or a piece of card, and fastened over the wound. This operation of "winding" the worm should be repeated daily, and at the end of several weeks the whole is removed, and the wound heals. If the worm be broken, and any portion be left, the seat of disease is apt to be attacked by severe inflammation. Dr. Horton states that the use of assafœtida at once effects a cure, as it destroys the worm, and prevents inflammation and suppuration. In the case of the leg, where the disease is attended by much local inflammation, it is said that amputation may be required to be performed to save life. The secondary results of guinea-worm disease are, according to Dr. Horton, stiff joints, contractions of the muscles, talipes, swellings about the malleolus, mortification of toes, enlargement of the scrotum and testicles, enlargement of the breast, and bucnemia or elephantiasis arabum.

Dr. Horton has recently written an admirable essay on the subject, containing his experience of the disease on the Gold Coast, and I heartily recommend its perusal to my readers, if they are working up the subject specially.

PHTHIRIASIS.

I use the term *phthiriasis* to denote the disordered state of skin which is produced by the attack of pediculi. It is distinct from prurigo, which I hold to be a disease wholly unconnected with the presence of pediculi, and which is characterized by the development, as primary phenomena, of fleshy papules, accompanied by pruritus and other symptoms of special character. Phthiriasis means, in fact, lousiness.

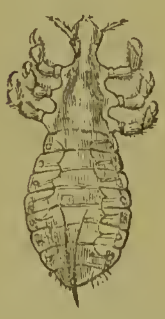
There are three species of pediculi or lice infesting the body—the *P. capitis*, infesting the head; the *P. corporis vel vestimenti*, or the body-louse; and the *P. pubis*, or crab-louse. Hence there are three varieties of phthiriasis—viz., phthiriasis *capitis*, P. *cor-*

poris, and P. *pubis*. The pathognomonic evidence of the presence and attack upon the skin of pediculi is a peculiar hæmorrhagic speck, as I shall describe it when I come to speak of phthiriasis corporis further on. In addition to this there are certain secondary phenomena, the consequences of the irritation set up, and the consequent scratching, and this irritation varies in degree and kind according to the special nutritive condition and tendencies of the attacked in each particular case. In one instance it will consist in follicular congestion alone, in another ecthyma or furunculi, in a third urticaria, in a fourth impetigo, as in the case of the scalp infested by pediculi, and so on. Pediculi, beyond the production of louse-marks, act in a precisely similar manner to irritants in general; and the impetigo following or evoked by the presence of pediculi, depends upon the impetiginous tendency, just as much as an urticaria is due really to a hyper-sensitive condition of the nerves of the skin.

Sometimes lice are produced in great numbers, and, it is said, subcutaneously. This is certainly incorrect. I will now proceed to particularize the various diseased conditions which result from the attack upon the body of the several kinds of lice.

Phthiriasis Capitis.—The pediculus capitis (fig. 58) is found chiefly on the heads of uncleanly and badly-nourished children. It deposits its eggs, which are recognised as "nits," on the hairs, and it excites a greater or less degree of irritation upon the scalp, and in some instances about the back and it may be the sides, of the neck. Generally speaking, the eruption, excited by the irritation and the scratching, is an eczema; and, in pyogenic subjects, this assumes an intensely impetiginous aspect; but, in healthy subjects, lice may give rise to little more than pruritus. The pediculi are found at the top and about the back of the head, at which situations the eruption is found. The head smells offensively, and the hair is matted together into a dirty mass at times. The presence of "nits" upon the hair at once suggests the cause of the eruption.

Fig. 58.



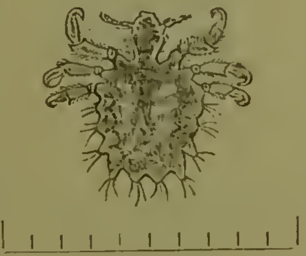
Pediculus capitis (female).

In some cases the pediculi excite a so-called "pruriginous" rash, made up of scratched follicles and small excoriations about the pole and nape of the neck, and occasionally small furunculi and ecthymatous spots.

The Treatment.—I almost invariably use, in conjunction with free and repeated washing with soap and water, a weak ammonio-chloride of mercury ointment, containing 5 grains to the ounce of lard, to which some essential oil (lavender) or a few drops of creasote may be added, for the destruction of lice. But a variety of other applications may be adopted, and many of these are equally efficacious. The plan of saturating the head for a day with petroleum, bound over with a cloth, with a good washing with soap and water to follow, as recommended by Hebra, is in vogue with some. Others prefer carbolic oil of medium strength. I suppose it is allowable for every one to use that particular remedy which he finds most efficacious. The "nits" may be got rid of by the use of a weak acetic acid lotion, 1 part to 10 or more parts of water, and by free washing.

Phthiriasis Pubis.—The pediculus (see fig. 59) which usually infests the inguinal and pubic regions is to be found adhering to the hairs close to the skin, about the scrotum, mons, anus, but less occasionally about the thighs, the abdomen, the front of the chest, the axillæ, and even the beard. Its attack occasions itching, and follicular congestion, and it may lead to eczema, and excoriations from scratching, &c. The pediculus grasps the hairs with its fore legs, and it is not easy to detach the insect. The pediculus pubis is not found amongst children, but adults, and, as my excellent friend Dr. McCall Anderson observes, "not uncommonly amongst the upper classes, who too frequently become affected from intercourse with females whose virtue is as loose as their habits are dirty." The observant eye speedily detects the little pediculi adhering as darkish specks close to the bases of hairs of the regions which are the seat of irritation.

Fig. 59.



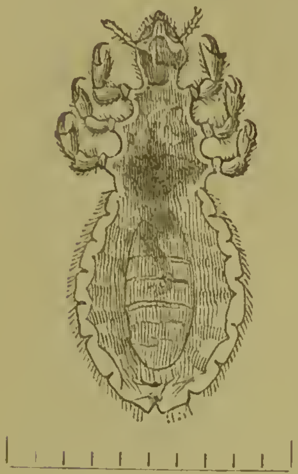
100th parts of an inch.
Pediculus pubis.

Treatment.—A very good plan is to drop a few minims of chloroform on a layer of cotton wool, and apply the latter to the part attacked by the pediculi, confining the vapour by a handkerchief or towel. The chloroform must not be allowed to come in contact with the skin, otherwise it will inflame it; but if the vapour gains access to the pediculi, the latter are killed, and they may be washed away. It only then needs the application of a weak stavesacre ointment, or bichloride of mercury lotion, gr. ij to ℥vj, once or twice, or a weak vinegar lotion, to be followed up with a good washing or two, to get rid of all that remains of them. Some prefer to anoint the parts with mercurial ointment. This is an effectual but a messy and inelegant plan of procedure.

PHTHIRIASIS CORPORIS.

According to the dermatologists who hold modern views, when the term phthiriasis alone is used, the diseased condition signified is that which is produced in connexion with the presence of the pediculus corporis or vestimenti (see fig. 60, after Anderson). It has been usual to designate this state as "prurigo pedicularis," but prurigo, as Wilson, Hebra, Neumann, and myself understand it, has nothing whatever to do with pediculi or phthiriasis. The term prurigo, however, is so much misused that it is necessary that I should be explicit with regard to its application in this place. The pediculus corporis, which attacks the body but lives in the clothes of those whom it attacks, is of whitish colour, and may be half a line or even two lines in length (see fig. 60).

Fig. 60.



100th parts of an inch.
Pediculus corporis
(female).

The eruption caused by the attack of the pediculi consists of an essential or pathognomonic lesion, and secondary phenomena or the results of irritation. It has been hitherto taught that pediculi bite, and certain red excoriated papules have been referred to as pediculus "bites." This is wholly erroneous. Pediculi have nothing to bite with. They are provided with a proboscis, with which they draw away blood, and the result is the production of a small characteristic hæmorrhagic speck. This is the characteristic lesion. The lice, of course, set up considerable irritation, and the patient scratches for relief; hence the occurrence of excoriations, eczema, papulæ, urticaria, pustules, and the like. So then it may be said that phthiriasis corporis is characterized by a pathognomonic lesion, and the results of the irritation caused by the itching induced, and the scratching practised to relieve it. I shall notice these points in detail directly.

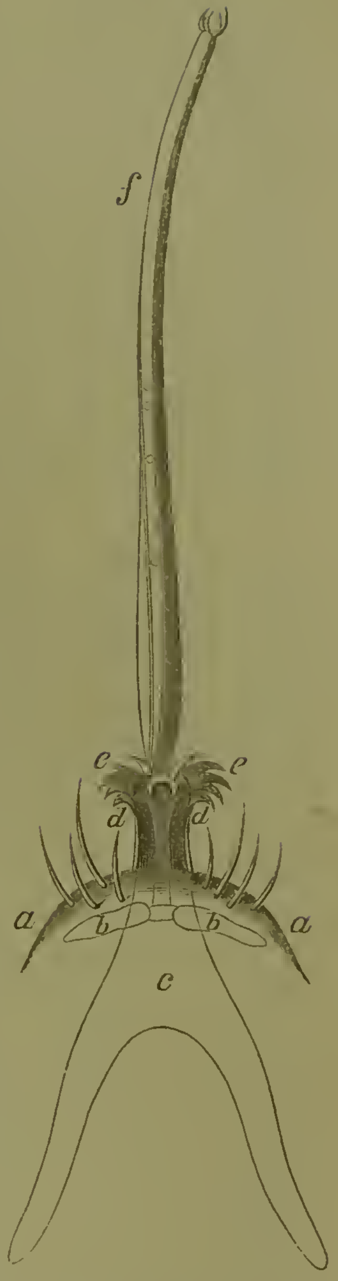
Phthiriasis corporis occurs mostly in old persons and those who are uncleanly, but it may occur in the young, when the secondary results are milder than in the aged. The phenomena in ordinary cases, taken as a whole, vary with the length of time the disease has lasted and the health of the patient. The lice make their attack in the first place upon the parts about the neck, the clavicles, and the shoulders, and may be detected on the skin in lively progression; they are mostly found, together with their whitish shining ova, in the folds of linen next the skin which come in contact with those parts. But when the disease has lasted some time, the whole back, the thighs, and the abdomen may be the seat of the produced eruption. The seat of phthiriasis corporis is, therefore, about the neck, shoulders, and clavicles, in the early stage, and the body generally as well in chronic cases. And the features of phthiriasis vary not only with the age of the disease but the state of the health, for if the patient be unhealthy and cachectic and malhygiened, and scratching has been practised a long time, the results surpass those of slight irritation. They consist not only, for example, in follicular congestion, but indications of severe irritation —ex., excessive pigmentation, urticaria, ecthymatous pustules, and the like. But I will now, having indicated the seat of the eruption, and the fact that it varies in different cases, proceed to give details.

A. *The Pathognomonic Lesion.*—I have said this is a minute hæmorrhagic speck. In order to understand how these specks are caused, it is necessary to refer to the anatomy of the pediculus. An elaborate article was written a year or two since by Prof.

J. C. Schjödte,* on this subject; and this observer clearly showed that the pediculus possesses a species of sucking apparatus, and not a mouth with mandibles.

It seems that Swammerdam many years since maintained this view.† Gustav Simon, however, in his work on diseases of the skin,‡ states that Swammerdam's assertion that the pediculus is provided with an haustellum only, was disproved by Erichsen as early as 1839, who declared that there were distinct mandibles and a pair of four-jointed palpi, and this opinion was supported, especially amongst later observers, by Dr. Leonard Landois.§ But Professor Schjödte remarks in the first place that the general structure of the pediculus as regards its muscles, limbs, and other parts, is not such as would lead one to suppose it could attack by biting. If the head of a louse be examined from underneath, without a thin glass, and by reflected light and a low power, as Professor Schjödte says, by altering the focus one finds what look like mandibles, but which are *evidently beneath the skin.* To determine the exact structure of the head, Schjödte took several lice and starved them for three days; then he put them on his hand to watch their attack on the skin. He tells us that, "as seen with the magnifier, the louse drew in its legs a little, arched its back, bent its head downwards to the skin at an oblique angle, and projected repeatedly forward and drew back through the fore end of the head a small, dark, narrow organ; at last it stood still with the point of the head firmly abutted against the skin." If the insect be now taken away nothing is seen of the projected organ, but if it be left to itself undisturbed, new phenomena are noticed. At the top of the head, between and a little in advance of the eyes, a triangular blood-red point becomes visible, which exhibits rapid contraction and dilatation alternately, the digestive tract is also seen to be in lively peristaltic action, and it becomes gradually filled with blood, the œsophagus especially contracting forcibly. Now if at this stage the head of the animal is rapidly cut off just in front of the eyes with scissors, the structure of the haustellum can be seen. The excised part remains attached to the skin, but with care can be taken away, and if placed under the microscope it shows a short dark-brown protruding haustellum, provided with hooks at its extremity, out of which an excessively delicate membranous tube of varying length is hanging. If an attempt is made to examine with a higher power in the usual way, the protruding parts at once disappear as a consequence of the pressure of the thin glass, and then the old image with "mandibles" and "palpi" is reproduced, since the slightest pressure forces the protruding parts back into the head. The way in which this occurs is explained in detail by Professor Schjödte.

Fig. 61.



Structure of mouth of pediculus vestimenti. *a.* Top of head. *b.* Band of chitine. *c.* Hinder part of the lower lip. *d.* Protruding part of the lower lip or suckers. *e.* The hooks. *f.* The tube formed by the apposition of the representatives of the jaws; blood globules are half-way along the tube.

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* Naturhistorisk Tidsskrift, ser. 3, vol. iii., Copenhagen, 1864, and Annals of Natural History, vol. i. 1866. I have contributed a paper dealing with this subject in detail to the Trans. of the St. Andrews Med. Grad. Association, vol. iv.

† Van de Ontleeding van de Menscheluys, Biblia Naturæ, i. 67.

‡ Die Hautkrankheiten durch anatomische Untersuchungen erläutert. Berlin, 1848; pp. 272-4. § Kölliker's Zeitschrift; February, 1864.

> "It seems that the mouth is like that in the rhynchotta generally, but differs in the circumstance that the labium is capable of being retracted into the upper part of the head, and has a fold in it when so retracted. In order to strengthen this part a flat band of chitine is placed on the under surface, and it is thinner in the middle in order that it may bend and fold a little when the skin is not extended by the lower lip. The latter consists of two hard lateral pieces, of which the fore ends are united by a membrane, so that they form a tube, of which the internal covering is a continuation of the elastic membrane on the top of the head. Inside its orifice are a number of small hooks, which assume different positions according to the degree of the protrusion, and if this is pushed to its highest point they form a collar of hooks curved backwards like barbs. The pediculus first inserts its labium into a sweat pore, and protrudes the lip. When the hooks get hold of the parts around, then the first pair of setæ (the real mandibles transformed) are protruded, and these are towards the point invested by membrane so as to form a closed tube, from which again is exserted a second pair of setæ or maxillæ, which form a tube and end in four small lobes placed crosswise. The whole forms a membranous tube, along the walls of which, setiform mandibles and maxillæ are placed as long narrow bands of chitine. This tube can be lengthened or shortened at pleasure."

Such is, in his own words, but condensed in substance, Schjödte's description of the mouth of the pediculus. The "mandibles" seen by Landois, Simon, and others, being the chitinous bands on the under surface of the head, separated somewhat by the retracted labium which lies on the thin central part; the appearance of "palpi" is given by the barbs or hooks which fringe the orifice of the labium. Swammerdam's original belief is thus shown to be correct by Schjödte, who proves that the pediculus does not bite, but inserts its sucker, if it may be so called, into a pore, and so gets at the blood in the nearest capillary vessel. The reader will understand these several points if he will refer to fig. 61, which is a copy of Schjödte's figures given in the "Annals of Natural History," vol. i. 1866.

Now it is quite clear, if the above account of the anatomy of the pediculus, and the mode in which it makes its attack upon the skin, be true, that the pediculus must produce a lesion, which is essentially a minute hæmorrhage. As the pediculus withdraws its haustellum, it will leave the mouth of the follicle slightly dilated, and the blood will well up into the follicle, and the lesion will be seen in its early stage as a minute depression with a bright red speck of blood, the size of a pin-point or so, at its bottom. There will be at the outset some swelling around the hæmorrhagic effusion, but this quickly subsides. Presently the follicle, distended by the act of the pediculus in sucking, recovers its normal calibre, and there only remains a small speck of blood. There may be many of these hæmorrhagic specks, and scratched follicles may be readily mistaken for them, but these latter are raised and not cupped in the early stage. The lesion produced by the pediculus is a hæmorrhage, not a papule, and it has the character of an effusion of blood from the very outset. It differs altogether from a papule which is subsequently scratched, and made to present a pruriginous aspect, for these are too large; and none of the excoriations, which are irregular in shape and size, or the pale papulæ seen in prurigo, are produced by the pediculi. I now never care to hunt in the clothes for pediculi, save for teaching purposes. The recognition of the lesion I have described as pathognomonic of phthiriasis throws a new light on the cause of many cases of children and young persons suffering from "pruriginous eruptions."

B. I have now to speak of the *secondary consequences* of the attack of pediculi, the production of irritation and its results, which have only been referred to in a general sense; and first of

The Irritation.—This is generally intense, and partakes of the character of burning, or of the creeping of a multitude of insects over the surface. It is intensified at night by the warmth of the bed, and if it shows itself in one spot, it is transmitted, as it were, by reflex action to other parts of the body. It first occurs about the neck.

The Excoriations are made with the nails. Some writers make much of these excoriations. Verily I have a difficulty in saying anything about them. Phthiriasis occurs usually in the old, whose skin is atrophied, and in which pruritus is readily excited; hence the scratching is violent, to relieve the intense irritation; the excoriations are deep; at first, however, they appear as whitish or reddened lines, with here and there a speck of blood about them, but soon the nails make way into the skin and produce well-marked short, but deep excoriations.

The Eruptions Excited.—The scratching causes hyperæmia of the follicles and hyperæmia of the papillary layer; hence in the developed disease papules are formed first by the hyperæmia and effusion into the follicular walls, and secondly, into the papillary layer of the skin. The papules become excoriated by scratching, a drop of dried blood forming at their apices, and these altered papules form the so-called "pruriginous" eruption. In some cases effusion of serum takes place into the papillary layer freely, so that the little areas enclosed by the natural furrows of the skin are elevated, as it were, into flattish boutons, and this constitutes the so-called *coarse urtication* of phthiriasis. The scratching may likewise excite urticaria, eczema, furunculi, and ecthymatous pustules, as before observed, and these several phases of secondary eruption, present in varying degree, and commingled with the pathognomonic lesion before described, may be classed together as the results of irritation. The skin moreover, becomes darkly pigmented, and covered by exuviæ. The longer the disease has lasted the more ample and extensive will be the "pruritic" eruption, the ecthymatous pustules, &c., if these occur.

These signs and conditions of irritation are not peculiar to phthiriasis, but are met with in scabies and other diseases, but the hæmorrhagic specks I have described are peculiar to the disease under notice. In children lice may give rise to urticaria, and set up a "pruriginous" rash, but the ecthymatous and furuncular items are wanting.

Diagnosis is readily made. The seat of the signs of irritation and scratching about the shoulders and clavicular regions of elderly and old people should invariably lead the practitioner to seek for the characteristic hæmorrhagic specks. Some difficulty may occur in regard to scabies, in which much scratching has been practised, but the seat of the eruption in scabies about the interdigits, the front of the fore-arm, the lower part of the belly and inner aspects of the upper part of the thigh, and its absence from the back and the regions above the nipple level, with the discovery of cuniculi, will at once settle any doubt. It must be remembered that scabies and phthiriasis do not by any means unfrequently occur together.

Treatment.—A cure is *quoad* the actual and essential phthiriasis very simply and effectually accomplished by the destruction of the pediculi; but is not so easy at all times to get rid of the irritation and its consequences, occasioned by the attack of the pediculi.

The pediculi infest the clothes and not the body, and to get rid of them it is only necessary to bake the clothes of the person suffering from phthiriasis to effectually destroy them. The *clothes*, and not the *patient*, require to be treated. The patient only requires a good warm soap-and-water bath to cleanse the skin. I treat all my cases at University College Hospital in this way, but then I have a disinfecting oven, and can use a temperature of 300° if I like, though 200° or 220° F. suffices. In private practice the only available plan is to order three or four warm baths, at intervals of two days, a weak ammonio-chloride of mercury ointment (gr. v. to ℥j) to be smeared, or a lotion containing detergent solution of tar (Formula 137), to be dabbed on the skin night and morning for a week or ten days or so, and to tell the patient to have the linen he wears scalded every time it is changed, which should be frequently done. The remedies above named being objectionable to pediculi, keep these latter away from the skin; but it is evident that this is not radical treatment, but a compromise adopted to suit special circumstances.

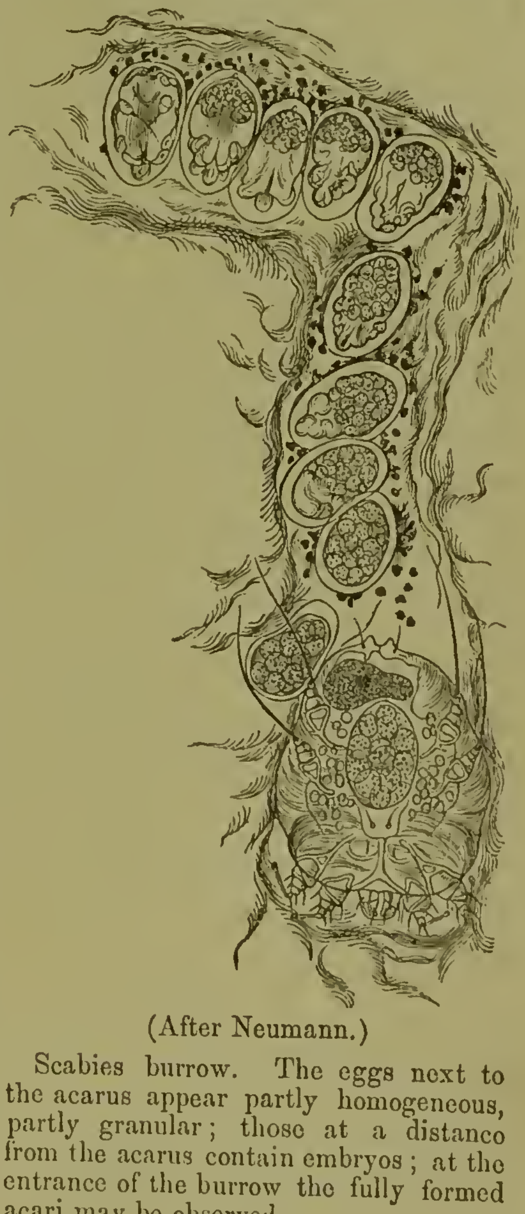
I cannot help thinking that pediculi infest not only the clothes worn, but the clothes of the bed of patients; but I have no proof of this, I admit. It is a point worthy of attention.

Patients suffering from phthiriasis frequently require good food, and tonics. If much irritation be left behind, alkaline baths with the subsequent inunction of oil and the occasional use of a prussic acid lotion locally applied will be of service, or even a few sulphuret of potassium baths in cases unaccompanied by eczema or hyperæmia of the skin. Eczema secondary to phthiriasis must be treated upon ordinary principles.

SCABIES, OR ITCH.

This is a most important disease to be well acquainted with. Whilst its frequency is extreme, its features, happily, are very definite, and its facility of cure great. But mistakes are very frequently made in its diagnosis. Scabies is a contagious disease, depending essentially on the burrowing of the acarus scabiei : and the female insect is alone the burrower, the male wandering over the surface. The female acarus in from ten to thirty minutes after being placed on the surface, gets beneath the skin, and busies herself with the commencement of a canal, or *cuniculus*, as it is called, in which she lays her eggs, from about twenty-four (Hebra) to fifty (Gudden). She, of course, gradually enlarges her canal (which is arched) until it reaches a quarter to four or five lines in length; the cuniculus has been observed, however, to be two or three inches long. It is curled or tortuous, and exhibits along its upper border little dark specks, which are regarded by some as "breathing holes" (Gudden); but by others (Hardy and Bazin) as the excreta of the insect; and by Hebra as dirt. The appearance is very characteristic. Fig. 62 represents, after Neumann, one of the furrows with contained ova. The female may live three or four months, but the persistence of the disease scabies depends chiefly upon the continuous hatching of the deposited ova. These come to the surface as the epidermis is exfoliated, just about the time the young are ready to be hatched, which occurs in about a fortnight after each egg is laid. The young female meets the male, becomes impregnated, and then rapidly burrows. The male acari, as before observed, do not burrow, but get under scales and crust.

Fig. 62.



(After Neumann.)

Scabies burrow. The eggs next to the acarus appear partly homogeneous, partly granular; those at a distance from the acarus contain embryos; at the entrance of the burrow the fully formed acari may be observed.

Having burrowed, the female ensconces herself at the end of the furrow, scooping out as it were a little circular bed, and we may oftentimes recognise the acarus (and its halting-place) as a minute white speck at the end of the furrow, the borders of its front or head-part looking like a little dark curved line; if we open this minute speck, and insert our needle, the acarus will cling and come away, adhering to it on removal. *This acarian furrow now described is the certain diagnostic mark of scabies.*

The effect of the burrowing of the acarus, which is the essential cause of scabies, is to set up more or less local irritation according to the state of the patient's nutrition. Dermatologists talk of papular, vesicular, and pustular scabies; whereas, the real scabies is only the acarus in its burrow—the cuniculus with the vesicle at one end (the result of effusion set up by the entrance of the acarus), and the embedded acarus showing itself as a white opaque speck at the other end. All else is merely secondary to the irritation set up and the scratching practised for its relief. The papules are erected and congested follicles, the pustules suppurating follicles, and so on; and these papules and pustules occur as a part of many other diseases in which the skin is subjected to severe irritation. On a healthy and clean skin no great amount of mischief follows; the acari, however, delight in dirt, and run riot as it were on unwholesome surfaces. In the first degree of intensity of the disease there may be simply those conditions which only necessarily accompany and constitute the mere burrowing of the acarus. The patient complains of itching, having all the characters of that of scabies, but a diagnosis of *pruritus* is erroneously made; the little furrows are so delicate, and unaccompanied by redness, that they are overlooked. These cases are very rare. The only way in which the papules can be fairly seen is by a side glance with the eye on the level of the skin; they are fine, delicate, slightly elevated, transparent, and may contain acari, the suspicious symptom is the itching at night, and a stray cuniculus may sometimes be found.

Under ordinary circumstances the acarus sets up effusive inflammation, which may reach the stage of papulation, or vesiculation, or pustulation, and the furrow is detected running away from the vesicles, which are peculiar in so far as they are isolated and acuminated.

Now the acari prefer the hands of adults and the thin skin between the fingers; and in these parts the disease is first seen, as solitary vesicles, many of which have the acarian furrow running away from them; then the disease travels to the front of the fore-arm, the belly, thighs, and especially the upper line of the penis. Intermingled with the vesicles are papules and often ecthymatous spots, produced as a consequence of the scratching; whilst linear abrasions and cicatrices are likewise formed.

In marked cases there is oftentimes a little line of scabious vesicles around the lower end of the ulna, at the wrist. In the female, vesicles are often seated around the nipple. The eruption is noticed also about the seats of pressure—ex., where a truss or a garter presses, above the middle of the thigh, and on the front aspect of the body.

Variations in regard to the seat of scabies are readily explained. Acari are frequently specially conveyed—for instance, by the child's hand, to the mamma, by the hand to the penis, or by the nurse's arms to the buttocks of the child. Scabies seldom occurs on the face, in consequence of the influence of the external cold, but in children there are exceptions. In children eruption, and especially the characteristic eruption (the vesicle and attached cuniculus), is often absent from the hands. Beginning about the buttocks, the disease is seen over the feet especially, the ankles and thighs, often the stomach, and the well-covered and therefore warm back; when it attacks the face, it may be accompanied by sympathetic eczema about the scalp. In children ecthymatous pustules are present as the rule. It is said by some that the acari are *only* found about the hands in adults, and that the eruption about the body is entirely sympathetic. This is not true. Hebra again thinks most of the eruption is caused by scratching. It arises in part from scratching, and is in part sympathetic; and although acari are to be found in largest proportion about the hands, yet they are often entirely absent there in the child, and may be detected over other parts of the body. I have seen scabies limited to the penis and scrotum; one remarkable case recently came under my notice in a gentleman who was supposed to have syphilis, and from whose penis I got a living acarus.

In *chronic* scabies we notice clinically two important facts:—

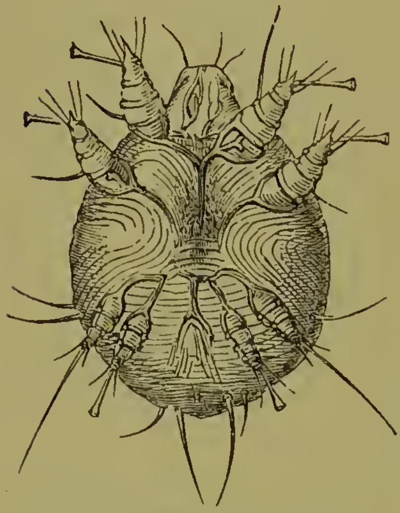
1. That the seat of the eruption may shift itself—at one time the hands perhaps may be comparatively well, and then a fresh development of vesicles and papules occurs.

2. The eruption may vary in intensity; it may diminish in severity and again become exaggerated, according to the hygienic conditions by which the patient is surrounded. In chronic cases the remains of the furrows are often found, as rugged lines formed by the shrivelled and broken walls of the furrows. This is practically diagnostic of scabies (chronic). If we cut off the upper part of the cuniculus, or take the rugged walls of old canals, and place them under the microscope, we frequently see ova, the casts of, or even young six-legged acari, occasionally an acarus; and these diagnostic certainties are also found in abundance in the crusts that form in scabies. These crusts may be softened up by turpentine or caustic soda or potash. (See fig. 64.)

Frequently in scabies several members of a family are attacked at the same time. The itching is bad at night, and evoked and intensified by everything that heats the body. Such is the description of scabies itself.

It is necessary to make special reference to the acarus that gives rise to scabies. The female acarus, as before observed, is the most important of the two. (See fig. 64, central acarus.) It can be seen with the naked eye as a small, whitish, shining body, and is about a sixtieth or an eightieth of an inch long. On the upper surface it is convex, and covered with short spines directed backwards, and by which, when in its furrow, the insect is prevented from retreating along the channel of its entrance. On the opposite or lower surface in the full-grown insect there are eight legs, the four front ones being provided with suckers, the four hindermost with hairs. The head, which is capable of elongation or retraction beneath the dorsal plate, is somewhat pointed at its free end, flat beneath, and widens out at the base, where it is implanted into the part between the anterior legs. There are two rows of stiff hairs surmounting the head; the mouth is a long slit on the under surface of the head; it is bounded on either side by two pairs of palpi and mandibles. At the base of the slit is the buccal orifice and the respiratory orifice, as stated by Bourguignon. The male (fig. 63) is smaller than the female. The inner pair of the posterior legs are provided with suckers, and the genital organs are well marked. The ova hatch out about the fourteenth day. The young acari have at first six legs; they then cast their skin, and are provided with eight legs.

Fig. 63.



Male Acarus Scabiei (after Anderson).

Diagnosis.—The following are the diagnostic points in scabies, but the only really conclusive proof of its existence, in my opinion, in ordinary cases is the discovery of the furrow and its acarus. The seat of the secondary eruption is most suggestive, of course, being in relation with the favourite seat of the acari.

1. Absence of febrile disturbance. 2. Absence of rash from the face and head (this is the rule); its absence from the posterior surface of the arm or body. 3. The seat of the eruption: where the cuticle is thin—as, for instance, the interdigital spaces: the anterior surface of fore-arm, front of the body below the nipple-level, about the mamma of women, along the front of the penis in men; in the seats of pressure, as, for instance, about the groin when trusses are worn, over the ischia, and about the inner line of the wrist forming a semicircle; in children—the buttocks, the feet, especially the inner line of the sole of the foot and about the inner ankle, and the palmar surface of the hands. 4. The isolation of the vesicles, and their pointed shape. 5. The *multiformity* of the eruption—namely, the intermingling of papules, vesicles, pustules, scabs, and even small ulcers. 6. The itching at night, and the peculiar linear scratches made with the nails and fringed with dried blood. 7. The cuniculus or furrow. It should be stated that in scabies in children the cuniculi rapidly pustulate, and their recognition is difficult, but still they are often seen. 8. The evidence of contagion, or the existence of the same sort of disease in a house or a family. It is in children that the greatest mistakes are made, simply from the want of knowing that scabies does not prefer their hands and arms, but their feet and

their buttocks. 9. The presence of acari amongst crusts, detectible by the microscope. Scabies may be confounded with:—

Lichen, but in lichen the eruption is *uniform*. There are no vesicles or pustules. Lichen occurs on the outer aspect of the fore-arm. The skin generally is dry, thickened, and discoloured, and though the back of the hands is sometimes attacked, the interdigital spaces do not suffer. The itching is different. There are no cuniculi; no acari, of course. It does not occur about the seats of pressure especially. There are no rhagades produced by scratching; and the rash is seen frequently about the face, and often over the back.

Phthiriasis.—In very many cases of scabies the papules become pruriginous, but not to such a marked degree as in phthiriasis; and this is in scabies a superadded feature only. The "pruritic rash" in scabies is seated about the belly and the anterior surface of the fore-arm; whilst in phthiriasis the papules are scattered over the outer aspect of the limbs, over the back, *above* the level of the nipple-line, around the neck—in greatest profusion; and about the legs. Moreover, there are no vesicles in phthiriasis, and no acarian furrows, but pediculi are present; and the sensation is not one of itching so much as formication and burning.

Lichen Pruriginosus.—This is simply lichen occurring in ill-fed and strumous children, and in consequence of being scratched the papules are covered at their apices with little points of coagulated blood. This disease lacks altogether the features of scabies as regards the acarus and its furrow, and the multiform aspect of the secondary eruption; and it is made worse by *the use of sulphur ointment.*

Eczema.—This differs entirely from scabies, in that it is essentially an oozing disease, in which the vesicles are agglomerated (and not isolated and acuminated), forming a patch of greater or less extent; the characteristics of scabies are wholly wanting. Of course scabies may excite eczema secondarily.

Complicated Scabies.—Almost any other eruption may occur together with that of itch. This is very important to bear forcibly in mind; the co-assemblage of symptoms must be recognised. Secondary syphilo-dermata and scabies are frequently co-existent. Eczema is very often associated as a sequence, and ought not to offer any difficulty. Scabies in children with congenital syphilis may occur. Lichen is sometimes set up and kept a-going by a few acari. *Many cases of lichen urticatus* are dependent upon scabies. Again, purpura and impetigo contagiosa may be associated with scabies. In all these cases there are generally (1) a history of scabies at the outset; (2) multiformity of eruption, and of course intermingling of the characters of the two co-existent diseases; (3) the appearance of contagion given to what is not generally observed to be a contagious disease. For example, a child may seem to catch lichen from another who has scabies;

the truth being that a few acari have been transplanted, and produced lichen to such an extent as to have masked the primary mischief, which is only slightly expressed. It is a most excellent rule—one that I adopt myself—to search for scabies in all cases in which eruptive disease is extensive, and accompanied by much itching at night.

Treatment.—Scabies does not get well spontaneously. It is necessary to treat, 1st, the scabies itself, killing the acari and their ova, by the application of parasiticides directly to the spots wherein these are located; 2nd, to get rid of the secondary effects; and 3rd, to treat the complications. In most cases, if the acari be destroyed, the secondary effects vanish without the employment of any measures against them. As a rule, the practitioner treats not only the essential disease—the real scabies—namely, the acarian furrow and its imbedded ova and acari—but also the secondary results, in the very same manner, applying parasiticides to the latter. Yet the former should be treated by parasiticides and the latter by soothing remedies; the more so as the acari are generally to be found in certain localities. In recent cases in adults the localization of the acari to the interdigits and the region of the wrists is complete; and it is easy to do harm by intensifying the secondary irritation, though the original cause (the acari) may be destroyed by our remedies. Therefore I say, in recent scabies use the parasiticides, sulphur, or storax, petroleum, benzine, or the like, to the wrists and interdigits, and simple unguents to other parts. In chronic scabies the case is different, for here the acari may be more or less ubiquitous as regards the body. But even here a distinction is to be made; the parasiticide should be applied to the small and fine rash, and not to the ecthymatous pustules.

Error number one, then, in the treatment of scabies, which is often made, is the application of parasiticides to "the wrong place." Error number two is the use of too powerful parasiticides. We need only use half a drachm of sulphur to the ounce of lard; there is no occasion for a stronger ointment nor for hellebore ointment. Gentle friction for a long time with a milder preparation is all that is required. My usual plan of procedure is as follows. I have applied *to all papules and vesicles*, the following ointment: sulphur, half a drachm; ammonio-chloride of mercury, four grains; creasote, four drops; oil of chamomile, ten drops; and an ounce of lard. This is rubbed in night and morning for three days, especially to the interdigits and wrists; the same shirt is kept on till the third day, when it is changed, and a warm bath given. The parasiticide must not be used for too long a time. The use of a parasiticide for two or three days should be followed by a good washing, and the discontinuance of the remedies for a night. If the patient be not troubled with itching during the night we may conclude that the acari are killed, and all we need do is to guard against the hatching out of fresh acari by the light application of our parasiticide once a day to any "pimply" or itchy place for a few days longer, taking care that the foul clothes are well heated or scalded. It often happens that the remedy used to destroy the acari is continuously used until it sets up on its own account severe irritation, which is mistaken for an increase or spread of the scabies. "Not too strong and not too long" is my rule for the use of remedies in scabies. The occurrence of red, rough, erythematous patches is a sign that the remedy itself is creating a disease.

Dr. McCall Anderson recommends storax ointment for the cure of scabies in preference to anything else. (See Formula No. 213.)

Where there is much irritation I apply a calamine lotion (Formula No. 117) night and morning to the irritable parts, and administer gelatine or bran baths in addition if necessary.

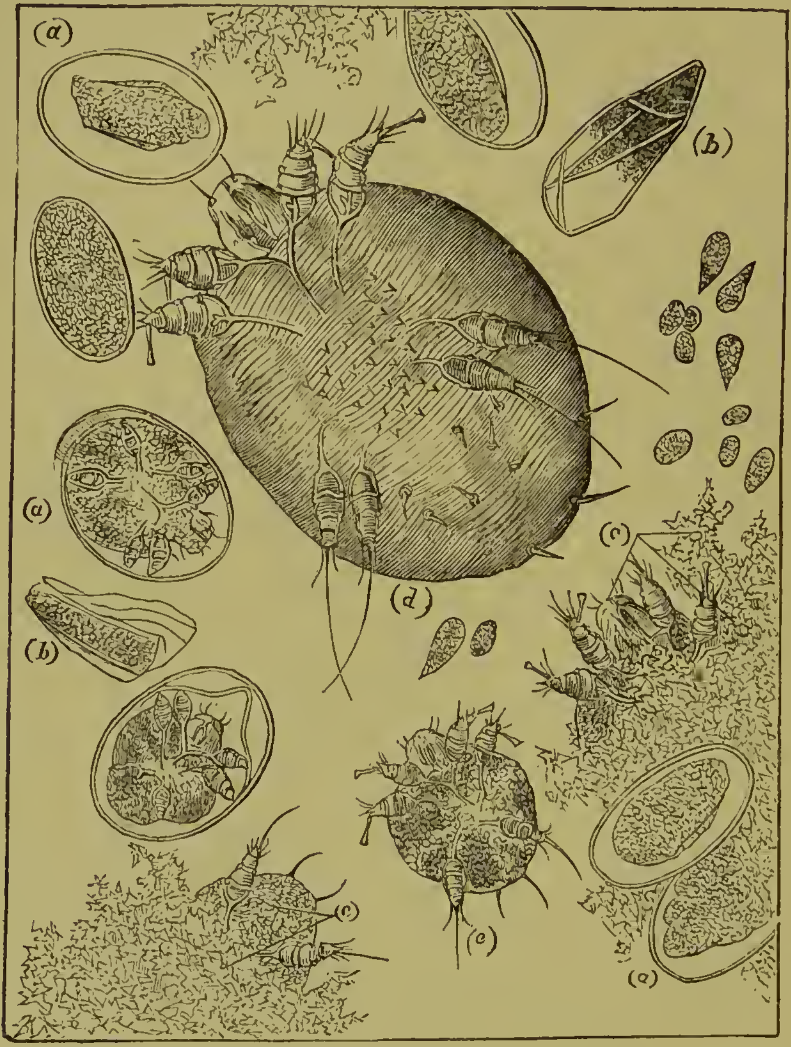
In chronic scabies I think the best plan is to give a sulphur vapour bath or two, but not more, as the skin becomes irritated; or I sometimes use a sulphuret of potassium bath if the skin is very itchy and discoloured. In complicated scabies, the scabies should always be treated, and the parasiticide applied to every suspicious papule. This plan may be adopted in connexion with the use of remedies suited to the complicating eruption, whatever it may be. It should always be remembered that in complicated scabies a small number of acari may exist with a good deal of eruption. When the scabies itself in severe cases is well, a certain period must necessarily elapse before the secondary eruptions can be cured. The process of repair takes time. The parasiticide treatment must not be pushed till *all* discrete eruption has subsided in cases of severity. The cure of scabies is judged by the decrease and cessation of itching and the vesicles and papules.

A number of special formulæ for scabies will be found in the Formulary (Nos. 189 *et seq.*).

Norwegian Scabies.—In certain badly-nourished and dirty subjects, the ecthymatous phase may be very well marked in scabies, in the form of large dirty greenish-grey crusts covering over red and moist surfaces. This may be well called scabies crustacea; it is seen in the sites of ordinary scabies: on examining the crusts under the microscope, a large number of acari, in all stages of development, are seen. Acari, too, exist in great numbers in the skin. Dr. McCall Anderson has been good enough to let me copy his representation. (See fig. 64.) This disease is often seen in Norway, and hence is called S. Norvegica. The treatment is that of ordinary scabies.

Army Itch.—It is asserted that there exists a special form of itching disease among soldiers termed "army itch." In a former edition I quoted at some length some information in detail received from army medical officers relative to this disease. I do not think it necessary on the present occasion, since I much doubt the existence of "army itch" as a separate disease. I have not been able to see it. Ordinary scabies occurs amongst soldiers in an ordinary form, and if anti-parasiticides are too vigorously used, it is succeeded by a "pruritic" (pruriginous) rash, which does not readily subside. Scabies is not treated now-a-days so vigorously as it was, and this secondary eruption (pruritic) is not so frequently met with. Further, phthiriasis is common sometimes amongst soldiers on the campaign, or if badly hygiened, and this is accompanied by a pruritic rash. Lastly, follicular congestion and its consequences (see Follicular Hyperæmia, p. 127) are very likely to occur under conditions of irritation in those whose skin has been disordered by "prickly heat," or who have resided in warm climates, especially if they are dyspeptic. The pruritic rash is then exaggerated by the use of flannel, sea-bathing, beer,

Fig. 64.



Crust from a case of the so-called Scabies Norvegica. *a a a.* Eggs of the acarus in various stages of development. *b b.* Egg-shells. *c c.* Fragments of acari. *d.* Female acarus. *e.* Larva. The little oval or irregularly-shaped masses are supposed to be excrement.

exposure to alternations of temperature, and the like. I suspect therefore that badly-treated itch, phthiriasis, and pruritic rash, consequent upon perverted innervation of the skin, make up the item, "army itch." The treatment consists, in the first place, of soothing remedies; in the second, in destroying the pediculi; and in the third, in the removal of dyspepsia, the exhibition of alkalies and a mild course of Donovan's solution, with locally the employment of alkaline and emollient baths and soothing lotions, such as are given in Formulæ 44, 45*a*, 54, 56, 68, 87, 117.

ERUPTIONS EXCITED BY GNATS.—I have met with a small species of tick in man; whether it causes disease or not, I do not know of my own personal observation. Various species of gnats are apt to inflict wounds, especially in the summer-time, which resemble musquito-bites. Musquitoes have not been known to exist in England. The so-called musquitoes, whose existence in England and other places has recently been asserted, are probably all British gnats. The females of the common gnat (*Culex pipiens*), every summer, after hatching out from water-tanks and open ditches around houses, attack the exposed parts of the body, and there are many other species of the same genus Culex. The musquito of the Riviera is also a Culex. But there are midges, some of which are called sand-flies, which inflict wounds on the body. Such is the opinion of Professor Westwood. Erythematous "bumps" caused by the bites of gnats may be treated with a weak solution of bichloride of mercury or carbonate of ammonia.

I now come to the second great division of parasitic diseases—viz., those produced by the development of vegetable parasites belonging to the genus fungi, and named

B. DERMATOPHYTIC, EPIPHYTIC, OR VEGETABLE PARASITIC DISEASES.

I have called these diseases genericeally, in the group—Tineæ; a mode of designation accepted and adopted in the new nomenclature of disease sanctioned by the College of Physicians. It may be expected that I should give an elaborate account of these diseases, but it would occupy the space of an entire book to do this satisfactorily. I shall therefore content myself with a practical account of the subject. Now fungi getting upon the surface may or may not *flourish*. When the soil is suited to their growth, they produce most definite lesions, perfectly characteristic, especially in hairy parts. The same fungi as those which attack the surface of man invade the hard structures of a very large number of the lower forms of animal life, and attack parts analogically the same as those attacked in man.

I hold that nothing but the ravages of a fungus can produce the peculiar changes which are seen in the hairs and epithelial tissue in the tineæ. I do not know of any disease other than a tinea in which fungi are present, and in which the hairs are loosened and rendered dry and brittle, or in which the epithelial cells are affected in such a way as to give rise to the conditions observed in chloasma.

Fungi will not flourish on a healthy surface, but grow upon those that are most prone to non-specific eruption; and for this reason vegetable parasitic diseases occur in young life, diminishing rapidly in frequency as adolescence advances. But inasmuch as there is one variety of ringworm infinitely more common than others, and to which any general remarks on this question I might make will apply with double force, I shall postpone what I have to say about the soil suited to the growth of fungi till I come to speak of tinea tonsurans.

General Structure of the Fungi.—I now speak of the characters of the parasitic fungi growing upon man in a general sense, reserving the description of individual parasites to be included in that of the several diseases in which they are found. Parasitic fungi found on man are often made up of minute cells alone, but as a rule of cell-productive bodies, called conidia and mycelium.

1. *Conidia* (reproductive bodies), commonly called spores. These are round or oval, having an average size of ·006 mm., but the size varies much; the conidia may be solitary or arranged in rows which are single or many filed, or they may be collected together in groups of various sizes. These conidia often show a dark spot, an actual nucleus, or granular nuclei, in their interior. They are double contoured, often constricted, and the halves may be unequal or equal in size.

2. *Chains of the same Conidia, which have a more or less Beaded Appearance.*—There is a real union between the component cells, and the rows are moniliform, or multiple. They may give off branches in various directions. These forms usually receive the name of sporidia, or sporule-bearers. Within the component elements or cells are found clear contents or granules, or, if large, actual cells.

3. *Threads* (*mycelium*) *of very various Shapes and Sizes.*—The least expressed form is that of a fine transparent filament. But there are stages between this and large double-contoured tubes. The contents of the tubes are usually granules and cells. The tubes are often not uniform in diameter, being more or less constricted, and the interior space is partitioned by septa. The filaments sometimes interlace in a very free manner, and may bear, in rare instances, at their extremities various forms of fructification, either with the form of an enlarged terminal solitary cell or a shortly-jointed tube, or a clustering of conidia seated upon a receptacle, or a radiate arrangement of conidia, &c. These tubes and threads are called *thallus-fibrils.*

4. *Stroma.*—This consists of an infinite number of minute cells, which are probably derived from the multiplication of granules in the interior of cells and filaments, and is the early condition or nuclear form of the fully-developed fungus, accompanies all fungi in a state of active growth, and is oftentimes well seen in tinea favosa. It is generally overlooked, and requires a high power for its detection. It is very potent for evil.

The structure of the spore is very simple. It has an outer coat or envelope composed of cellulose, and an inner one, or utricule, enclosing a liquid which contains floating granules, and is coloured blue by iodine.

Diagnostic Features of Fungus Elements.—The *conidia* may be confounded with many other cells. With fat globules, blood discs, corpuscles of various fluids, young epithelial cells, or rather their nuclei, pus, and earthy particles. The effect of re-agents will, however, prevent error. The conidia are unaffected by ether, chloroform, and spirit of wine, which dissolve fatty cells, and render epithelial tissues transparent. Ammonia renders the conidia perhaps a little more colourless, whilst it dissolves pus and the secretion of many eruptive diseases (which contains small granules and cells somewhat resembling large conidia) "converting them into a gelatinous mass." Impetiginous crusts, fat, pus globules, hair, and epithelium are dissolved when heated in a hot solution of potash, especially if a little alcohol is added.

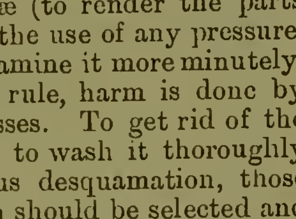
The greatest care must be taken on every occasion to distinguish between *fatty cells* and conidia, and diffused molecular fat and sporules or the nuclear form of fungus; indeed this is the important practical point requiring attention clinically, and really it is a difficult thing oftentimes fairly to get rid of the fatty matter. If we suspect the presence of much fat, it is advisable to allow the hair or other object *to soak for some time* in ether—if in fact the least doubt exists as to the nature of any particles, cells, or granules. The fat cells always exhibit a wide variation as regards size, and have a duller aspect; the cells of the fungus, on the other hand, are uniform in size in any particular case; they refract the light very perfectly; their outline is more defined and contoured; they are not affected by ether; and they contain a nucleus or granule which may require, however, a high power for their definition. In old-standing cases of tinea, the epithelial cells take on a kind of fatty degeneration, and look very like cells invaded by sporules.

When the *mycelium* is well developed, it cannot be mistaken very well for anything else, but there are one or two foreign matters and modifications of normal structure that offer appearances similar in aspect to some of the less flourishing examples of mycelial threads. I have known the fibres from handkerchiefs or towels which have been used to cleanse the object-glass to be recognised as mycelial filaments. Sometimes some of the fibres of the hair will be stripped of the shaft and curl back like mycelium. The edges of cells are dark, and never have a clear central line, do not branch, and do not contain granules. The safeguard is to get the mycelium free from surroundings, and then no error can arise. The imbrication of the epithelium is sometimes irregular, and the edges of the scales present exactly the appearance of mycelium running transversely through and across the shaft of the hair, and it is really difficult to imagine that filaments are not present, more especially if there happen to be a few sporules scattered throughout the interior of the hair. By careful observation, however, the outlines of the cells may be traced not only over, but beyond the area of the hair.

In examining for fungus elements a hair should be extracted from a diseased patch, and placed *at once* in a little diluted liquor potassæ (to render the parts transparent), then covered by a piece of thin glass, without the use of any pressure, and put under the microscope. Then if it be necessary to examine it more minutely, the parts may be carefully dissected with a needle. As a rule, harm is done by rubbing or squeezing the preparation between the two glasses. To get rid of the fatty matter, it is best to soak the hair in ether, and then to wash it thoroughly before adding liquor potassæ. In the case of furfuraceous desquamation, those scales which are situated at the edge of the diseased patch should be selected and treated in like manner, without using pressure, and as small an amount of the epithelial matter as is convenient should be subjected to examination.

I have before observed that the stromal or minute form exists in abundance very frequently, and is not discovered; the fibres of the hair concealing the small cells. If the hair is allowed to soak for a while in alkalies, the cells may be more readily seen, and in warm weather the minute form of fungus will develop in glycerine and water in a few days to a recognizable size. This stromal form may be mistaken for pigment-granules; but the latter are uniform in size, do not refract the light, and there is no accompanying damage to the hairs when they are present, and with a high power the granules do not appear translucent. When in doubt, I at one time was in the habit of employing artificial germination to assist in solving the difficulty. The following figure represents the appearance presented by the stromal form of fungus after being "put up" in glycerine for a few days. On the first examination only the faintest trace of the cellules was visible.

Fig. 65.



Mode of Discovering Fungi.—Many persons find the discovery of the fungi in parasitic diseases a difficult matter. The main reasons why the fungi are not detected are as follows:—

(1.) From having too large a mass under examination. Thin sections or layers of epithelium or hair should be taken. (2.) The non-use of re-agents to render the suspected tissues more or less transparent. (3.) Too much manipulation is practised, and thereby conidia are sometimes rolled up, as it were, in epithelial layers softened and altered by re-agents, and thus concealed. (4.) The presence of pigment in large quantity may conceal the fungus elements. (5.) Ill selection of hairs and scales. It is very possible to extract for examination a healthy hair which stands in the middle of diseased ones; diseased hairs are loosened in the follicle, and altered in texture, dry, and brittle. (6.) The fungus may be left behind in the follicle, the hair coming away without it. (7.) Secondary changes are often mistaken for the real disease; for example, a scaliness may result from the irritation of a fungus not in the actual seat of the scaliness, but in parts near, and the absence of the fungus from the same scales is no sign that the parasite is not the indirect cause of the scaliness. (8.) The stromal minute form of fungus is mostly overlooked.

The Mode of Entry of the Fungus into the System.—There is no difficulty in accounting for the access of germs to living bodies, for these germs are freely distributed and disseminated in the air. A good illustration of this fact may be noted in the experiments of M. Bazin (*Gazette Méd. de Paris,* July 30, 1864), which consisted in passing currents of air over the head of a favus patient, and thence over the open mouth of a jar containing ice. The ice cooled the air, causing the deposition of moisture, in the drops of which the achorion sporules were detected. The same thing may be shown by holding a moistened glass slip near the head of a patient, and just rubbing his scalp freely. Of course, actual contact is much more effectual in the implantation of germs. I have myself detected fungus elements in the air of a school in which a good number of children were suffering from ordinary ringworm, and the reader will find the details in the section headed "Ringworm in Schools," further on. But supposing that the sporular elements find their way to the human surface, it may be asked, how do they get beneath the tissues? In various ways probably. The fungus elements may enter by fissures or natural orifices; for example in ordinary ringworm the sporules lodge themselves at the opening of the hair follicles, and put out fine filaments that make way amongst the tissues. The growing mycelial thread forces itself more and more beneath the layers of the superficial tissues; or processes may shoot out from the spores themselves, and enter beneath the epithelium; or the spores may be enveloped and carried bodily inwards; or enter by traumatic lesions. In each and every instance the germs of parasites are derived *ab externo* and not generated *spontaneously.*

The Transmission of Parasitic Disease from Animals to Man.—There can now be no doubt in the mind of any dermatologist who has made himself acquainted with even the scanty literature of this subject, that parasitic disease, especially favus, is frequently, and in some sense freely, transmissible from animals,—ex., the calf, the ox, the horse, mice, and cats—to the human subject. I shall not fail to mention facts in detail in speaking of favus and tinea tonsurans. I am informed, upon good authority, that the transmission of ringworm to men is of very frequent occurrence in Australia, the milkers of cows especially being largely affected. Dr. Frazer (*Dub. Quart. Journ. of Med. Science,* May, 1865), has contributed a good paper to the subject, entitled, "Remarks on a common Herpetic Epizootic Affection, and on its alleged frequent Transmission to the Human Subject," containing cases. I can confirm by my own experience the truth of the statement that mice with favus can communicate the disease to the cat, and the cat may give favus, or even tinea circinata, subsequently to the human subject. See also the *Veterinarian* for 1871 and 1872.

The Principles of Treatment in parasitic diseases.—The main aim in all cases is to remove or destroy the parasite, and as this is found in and around the hairs, it may be in great measure removed by what is called epilation—that is to say, the extraction of the hair with tweezers *en masse,* but as the hairs are brittle, in the attempt they frequently break off, leaving their stumps behind, loosened, and perhaps filled with conidia. Still this imperfect kind of epilation is needed in severe cases, where the disease is deep, and it is desirable that some agent should be at the same time employed to destroy the fungus in and about the follicles, for at the time of epilation greater access to the interior of the follicle may be attained.

In slighter forms of parasitic disease, and in those which are recent—that is to say, where the fungus had made its way into the structures only a short way—the destruction of the fungus may be readily and easily secured, simply by the use of what are called parasiticides. In certain of the slighter forms, general remedies are scarcely needed, but in other instances, where the disease is extensive, and the fungus luxuriant, the constitutional condition is clearly one that is peculiarly fitted for the growth of parasites, and some evidence of its nature may be gained by enlarged glands, a pale, pasty, flabby countenance, a certain amount of anæmia, want of flesh, disordered bowels, and such like symptoms, clearly indicating that assimilation is at fault. In such cases the cure is expedited considerably by the use of iron, quinine, and especially cod-liver oil in the upper classes, and the same remedies, with cleanliness, a proper amount of fresh air, and an increase in the meat diet in those lower in the social scale. But I have proposed already to deal with this point more fully under the head of the treatment of tinea tonsurans.

DETAILED DESCRIPTION OF PARASITIC DISEASES.

I proceed now to describe the mode of origin, the features, the course, the causes, and the treatment of the several varieties of vegetable parasitic diseases, or the tineæ. These diseases are ten in number:—

1. Tinea favosa (commonly called favus). Parasite: *achorion Schonleinii.*
2. Tinea tonsurans (ordinary ringworm of the scalp). Parasite: *trichophyton tonsurans.*
3. Tinea kerion (a modification of tinea tonsurans). Parasite: same as the last.
4. Tinea circinata (ordinary ringworm of the body). Including Burmese ringworm, Malabar itch, Chinese ringworm, etc. Parasite: *trichophyton tonsurans.*
5. Tinea sycosis (mentagra, or sycosis parasitica). Parasite: *microsporon mentagrophytes.*
6. Tinea decalvans (area, or one form of alopecia). Parasite: *microsporon Audouini.*
7. Tinea versicolor (chloasma, or pityriasis versicolor). Parasite: *microsporon furfur.*
8. Tinea tarsi. Parasite: *trichophyton.*
9. Mycetoma, the madura foot or the fungus foot of India. Parasite: *chionyphe Casteri.*
10. Onychia parasitica, or onychomycosis. This variety occurs as the sole disease, or part of certain of the tineæ.

Eczema marginatum, so-called, I shall describe under the head of Tinea circinata. It has been usual to add tinea or plica polonica to the above list, but this disease is only a peculiar felting of the hair, the result of neglect and uncleanliness, and in connexion with which fungi occur accidentally.

TINEA FAVOSA, OR FAVUS.

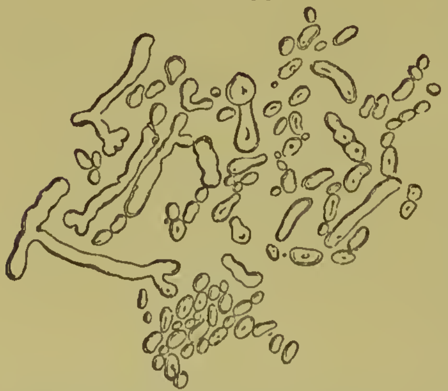
This is a rare form of disease in England; it is commoner in Edinburgh. It commences generally at about seven years of age (it may be sooner, it may be later), and is seen among the poorer classes of the community.

General Characters.—It is characterized by the presence of little straw or sulphur-coloured crusts, having a peculiarly well-marked cup-shaped appearance, called favi, and surrounded by more or less redness. The disease commences with the implantation of the spores of a fungus just within the follicle, and all that is noticed in the early stage is an increased production of epithelial scales; presently a little white sub-epidermic speck becomes visible, which quickly develops into a "favus." The favus is nothing more than the developed fungus about a hair follicle, the latter being in its centre—in fact each favus cup is pierced near its centre by a hair. At first the favi are but small yellow specks, but they increase in size until they acquire a magnitude equal to a split pea or a little larger as regards their area. They are roundish (seated upon a depression of the derma), in size about $\frac{1}{25}$ to $\frac{3}{5}$ inch in diameter, and $\frac{1}{25}$ to $\frac{1}{8}$ inch in depth, concave above, convex below, and sometimes marked by concentric lines on the upper surface; they are composed entirely of fungus elements—*spores,* mycelial *threads,* and granular particles, called *stroma.* They may remain more or less separate the one from the other, or they may coalesce in consequence of being thickly crowded together, and their individuality is more or less lost in the honeycombed appearance presented by the light yellow, irregular crusted mass which is formed. The terms favus dispersus and favus disseminatus have been applied to these two different phases of the disease.

As the fungus grows downwards into the follicle the formative apparatus is interfered with, and hence the hair is loosened in the follicle, and is at the same time invaded by the parasite, and rendered brittle, opaque, and thickened. The epithelial scales of the surface are likewise invaded by the fungus. If the scalp be entirely freed from the favi, it is seen to be red and tender, but the favi soon re-form. As the disease advances the mass formed by the coalesced favi becomes lighter and more brittle, and baldness sets in. If the disease be severe the hair follicles are destroyed, and the scalp is red, irritable, shining, and thinned. The nails often become invaded by the fungus, and in well-marked cases of disease are thickened, rendered opaque, fibrous, and brittle. (See Onychia parasitica.) The general health of favus patients is said to be good, but in all cases uncleanliness, bad food, bad living, damp dwellings, &c., have (some or all) exerted their influence upon such patients. There is always a good deal of local itching in favus. The odour of favus has been described as like cat's urine, mice, &c.

The fungus (fig. 66) is the achorion Schonleinii (Link). It consists of—(*a*) spores, generally somewhat oval, $\frac{1}{3500}$ inch in diameter, or thereabouts, the largest having a double envelope, being either free, jointed, or even constricted; (*b*) "filaments which are large or branched, more or less tortuous, containing generally granules and sporules in their interior, and on an average $\frac{1}{8000}$ inch in diameter; (*c*) sporophores or fibres, which are short and straight, and bear at their extremity spores—generally four, it is said—these are not often seen; (*d*) stroma, which is made up of a number of free but small cells, exceedingly minute sometimes." Favus affects the scalp chiefly,

Fig. 66.



but it may be seen on the general surface. The fungus invades the epithelial scales as well as the hairs. It was discovered by Schonlein in 1839, and is generally regarded as a modified form of penicilium. This is a question, however, I need not discuss here.

The question of the transmission of favus from domesticated animals has been very carefully investigated by M. Saint-Cyr,* Professor at the Lyons Veterinary School. He relates instances in which an eruption having all the characters of tinea circinata was contracted by inoculation with favus matter, but which in some instances subsequently exhibited in parts the aspects of *favi.* The source of the favus was diseased rabbits, and also diseased mice; one diseased mouse was found among the clothes and body linen of one of the attacked.

I may take this opportunity of remarking upon one conclusion which may be drawn from M. Saint-Cyr's observations—viz., that some suitable soil seems to be needed for the free growth of parasitic fungi. M. Saint-Cyr found that though many students have been handling, or been in contact with diseased mice and rabbits, only a certain few got any disease therefrom.

In the year 1866 Dr. Purser, of Dublin, wrote to enclose me some fungus taken from the paw of a cat affected by favus; and he remarked that as "several of the human members of the family have recently suffered from ordinary ringworm of unmistakeable character, I thought it unnecessary to employ the microscope. They are now nearly well. It was only yesterday that I became aware of the disease in the cat." I readily found the fungus, having the characters of *achorion.* As it was interesting that persons were infected from the cat with tinea circinata, I wrote for further particulars. Dr. Purser convinced me of the transmission of the disease from the cat. Subsequently he sent me some crust taken from an inoculated spot on his own arm, which was "spreading at the edges by the formation of minute vesicles, which leave yellowish crusts, somewhat like those of eczema, the centre healing. . . . In some of the crusts to-day," Dr. Purser added, "I can see very minute sulphur yellow-coloured spots appearing, so that it may turn out favus after all."

I suppose it may very reasonably be doubted whether true tinea circinata is produced in these cases. It may be argued that the early stage of favus of the general surface of the body, presents external features like tinea circinata until the fungus has had time to fully develop into sulphur-coloured masses, but that potentially it is different. This is a point of very little practical importance *per se*, and I shall not argue it out here, since the treatment for the two conditions is essentially the same.

Diagnosis.—Favus might be confounded with impetigo: but the latter has a history of discharge; it has no "cupped crusts;" there is no fungus about it; and no effects of parasitic growth, such as hairs altered in texture, &c.

Treatment.—This consists in the exhibition of both general and local remedies; it is necessary, in the first place, to see that favus patients have good food and plenty of fat. Whilst cod-liver oil and iron are generally indicated, change of air and cleanliness are often especially necessary. Locally, the hair should be cut short; the crusts must be removed by soaking with oil, or hyposulphite of soda lotion, or, if preferred, sulphurous acid lotion, or they may be loosened and in chief part got rid of by poulticing. When the scalp is cleansed, the hairs must be extracted, and parasiticides applied at once. A number of parasiticides will be found in the Formulary (see Nos. 216, 220, &c.). A certain portion of surface should be cleared each day, the whole head being meanwhile kept moistened with sulphurous acid lotion. If I want to cure a favus case, I epilate and apply the parasiticide myself. But it takes time and is troublesome. When the amount of parasite has been diminished, as ascertained by the microscope, it is then advisable to exclude the air by the free use of unguents, after a good application of some parasiticide: the after-baldness must be remedied by stimulation, though it is impossible in some cases to induce the growth of hair from the fact that the hair papillæ have been destroyed completely by the inflammatory action set up by the fungus.

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* Étude sur la Teigne Faveuse chez les Animaux Domestiques; Annales de Derm. et de Syph., 1869, iv. p. 257. And also the Veterinarian, vol. xlv. No. 531; fourth series, No. 207, p. 192. In the same number is another article bearing on the same question by Mr. Macgillivray.

TINEA TONSURANS.

The parasitic disease called tinea tonsurans, and the two next about to be described, are in reality essentially the same. In tinea tonsurans it is the scalp which is affected, and in tinea circinata it is the body that is attacked, and a certain variation of appearance is produced in the two cases because the one is entirely covered by fully developed hairs, the hairs are texturally altered, and more or less destroyed and lost. But if the general surface of the body were hairy like the scalp, ordinary ringworm of this part (tinea circinata) would present the same features as ringworm of the scalp (tinea tonsurans). The other form referred to—viz., tinea kerion, is ordinary ringworm of the scalp, in which the hair follicles are specially inflamed and pour out a viscid mucus.

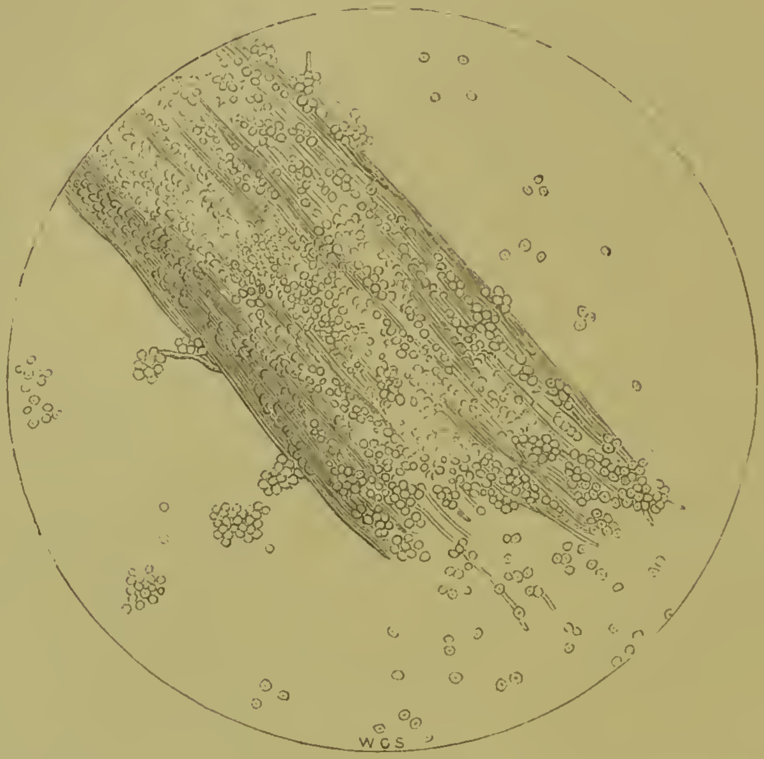
It will be convenient to describe these three forms of tinea under separate heads for clinical purposes, but the reader will be good enough to remark that they are all produced by the same fungus, and that the differences in external aspect are due mainly to differences in accidental concomitants.

Tinea Tonsurans is the ordinary "ringworm" of the scalp, &c. It is rarely seen except in children—in fact I have, I believe, never seen it in the adult. It is, like favus, contagious. It does not appear to be attended by any marked ill-health, though it is frequent in lymphatic subjects. It generally consists of little circular patches, varying in size from one-half to several inches in diameter, covered over by very fine whitish meal-like scales, and the hairs of which look dry, withered, and as if nibbled off at a distance of a line and a half from the scalp. In the first instance a fungus is imbedded in the under surface of the epithelium, just within the follicle. It finds its way into the follicle more deeply, and excites some little irritation and hyperproduction of epithelial cells from the hyperæmia induced, as seen by the microscope in the early stage, so that the hair is surrounded by an unusual mass of epithelial and blastematous matter. The fungus presently gets down to the formative papilla, thence into the hair itself, and is carried up with the growing parts into the hair, which becomes in consequence changed, as before described—*i.e.*, opaque and brittle. In this early stage the hair altered in texture is bent or twisted just above the point of its emergence from the follicle, and it is at this place that the hair presently, still more changed by the developing of fungus, breaks off, producing a "nibbled off" appearance. If an attempt is made to pull the hairs out they break off. At this time the orifices of the follicles appear to be fringed round with little "micaceous" scales, and the surface of the diseased patch is the seat of the furfuraceous desquamation, composed of meal-like scales before noticed. As may be readily understood if it be remembered that there is in the follicles a certain amount of effusion as well as of parasite and of epithelial cell collections, the whole patch becomes slightly elevated, and the individual hair follicles more prominent than in health. The scalp may be diseased in one spot, in several places, or over its whole extent. Oftentimes a little erythematous ring bounds the circumference of the diseased patches. If a diseased hair be extracted and examined, it will be noticed to be swollen, perhaps bulged here and there, of dark colour or opaque, with its fibres more or less separated by collections of conidia, which become distinctly visible on the addition of a little liquor potassæ; in other cases the diffusion of conidia is pretty general. As in favus, if any mycelial threads are present they mostly run parallel to the fibres of the hair, and not transversely. Figure 67 is a very good representation of the fungus found in this disease. The mycelium is shown in fig. 70. The fungus of tinea tonsurans is termed *trichophyton tonsurans* (Malmsten) or achorion Lebertii; the spores are most numerous; they are round, ·003 to ·007 mm. long, by ·003 to ·004 mm. broad ($\frac{1}{8000}$ to $\frac{1}{3000}$ inch), nucleated, oftentimes constricted, and exhibit a great uniformity in size in the same subject: they are very plentiful in the root of the hair. The filaments are articulated, somewhat undulated, and possess granules in their interior. They are few in number. The fungus invades not only the hair but the epithelial scales. The conidia are sometimes so thickly crowded together *en masse* that it is difficult to see them, nor do they appear distinct until the mass is separated out. Fungi, I think, are often overlooked from taking too thick a mass of material for microscopic examination.

As the result of tinea tonsurans more or less baldness may occur, but this is a temporary affair. A certain amount of itching is frequently present in the disease. Tinea circinata, or ringworm of the surface, very commonly occurs in connexion with tinea tonsurans. In a public school near London in which ringworm existed as an epidemic, I found that distinct tinea circinata existed or had been present in 55 out of 121 children who were affected with tinea tonsurans. This will give some id a of the frequency with which the two local varieties of common ringworm co-exist.

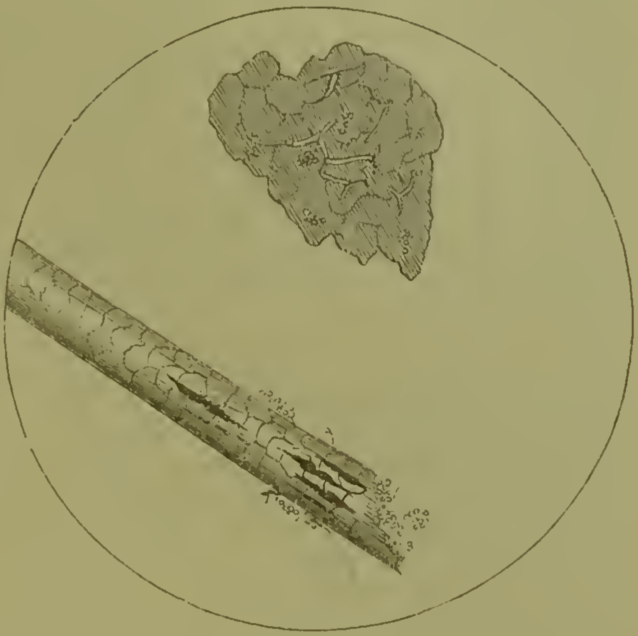
There is another fact worth mentioning in relation to the identity of tinea tonsurans (scalp) and tinea circinata (body). It is this, that a patch of tinea circinata, say of the face, contiguous to hairy parts, may, by enlargement, encroach upon these latter, and in that case the hairs become implicated and tinea tonsurans is produced. Illustrations of this fact I have often noticed not only where ringworm travels from the forehead to the scalp, but also when the eyebrows and contiguous parts are affected by ringworm. A well-marked case of this kind came under my notice a little time since (1871), which furnished the accompanying illustrations: fig. 68 representing the fungus seen in the scales, and in a hair taken from a furfuraceous patch of tinea circinata, fig. 69, the fungus attacking one of the hairs of the inner half of the eyebrows, which were brittle, broken off, and thickened, as in tinea tonsurans; in fact, this half of the eyebrow presented all the aspects of tinea tonsurans. In this case tinea tonsurans of the scalp was also present. It follows from the fact that tinea circinata and tinea tonsurans differ only as regards seat, that the former can, by contact give rise to the latter. This must be remembered in reference to the prevention of ringworm amongst the healthy. But I shall speak particularly of this matter in dealing with ringworm as it occurs in schools.

Fig. 67.



Tinea tonsurans is more prevalent at some than at other times. It may prevail in schools and public institutions as an epidemic, but as there are certain special considerations to be mentioned when it so occurs, I propose to devote a separate section to the subject of "Ringworm in Schools" after having described the diagnosis and treatment of tinea tonsurans, p. 442.

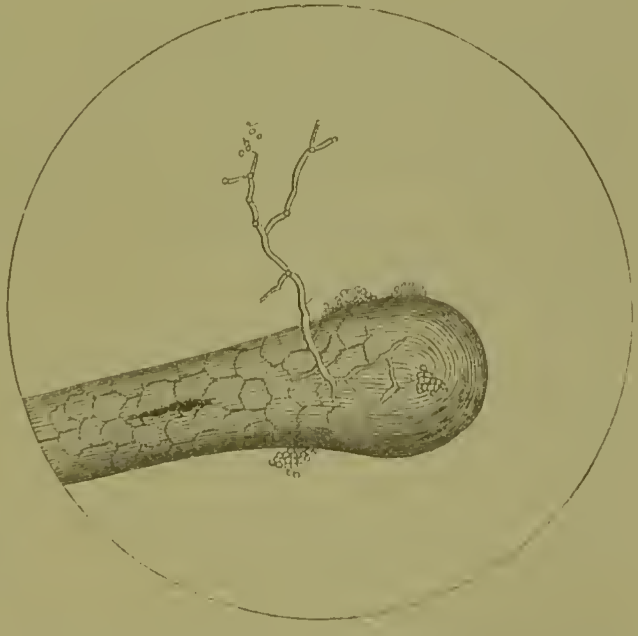
Fig. 68.



Broken off hairs and epithelial masses from a patch of "furfuraceous" ringworm of the forehead, involving the eyebrows, the inner part of eyebrows being tonsurant. T. tonsurans of the head co-existed.

Diagnosis.—Tinea tonsurans in an early stage bears no resemblance to any other disease. Over a small circular spot the hairs look dry and withered. They are bent just above their point of emergence from the follicle, and there break off, and the presence of these broken off hairs is characteristic. No other disease, save a parasitic one, will produce this. Whenever, then, on the scalp, a circular patch of disease occurs, which is somewhat scaly, and there are short broken off hairs studding its surface, the microscope should always and at once be used, and will give plenty of evidence of the presence of a fungus.

Fig. 69.



A hair from a patch of T. tonsurans of the eyebrow.

Treatment.—It is necessary in dealing with the treatment to recollect that three things are required of the practitioner. 1, To alter, if possible, the soil so as to render it less suitable to the growth of the parasite; 2, to destroy the parasite; and 3, to remedy the consequences of the attack of the parasite. Of course, in slight cases, and where the fungus has not penetrated deeply into the follicle, it is easy to destroy the parasite by local remedies at once, and to put an end to the disease, but I am now speaking of what is required from the medical man in the majority of cases of tinea tonsurans.

First, as regards the *soil*. Most instances of ringworm occur in children who possess the lymphatic temperament, many in those who are strumous, or who are at least thin, fair, and pallid. Even in the instance of dark-complexioned children, some of the evidences of the lymphatic temperament are frequently present. If inquiry be made in a mass of instances, according to my experience, children attacked by ringworm will be found to have been in the habit of taking very little fatty matter, or, if taking it, to have assimilated it very badly. Mothers and nurses, as I have pointed out,* will, in reply to questioning,

> Affirm that this or that child will never touch a bit of fat, and the frequency with which the fat of meat is scrupulously avoided by many children suffering from severe ringworm has long struck me as a remarkable fact. But supposing children do eat fat, it is often not assimilated, for the stools are pale or clay-coloured, the digestive act performed with difficulty or discomfort, and the tongue is pale, the urine loaded, and headache is frequent, and there are symptoms that point to an inactive liver and scanty biliary secretion, in connexion with which deficient absorption of fat from the intestinal tract must be associated. As a point of practical importance, I find it of the greatest service to recognise—over and above the propriety of removing anæmia, debility, and other causes of weak health, which necessarily favour the increase of tinea tonsurans—the peculiar necessity for exhibiting to children attacked by ringworm a large amount of fatty matter, if not in the food, at least in the shape of cod-liver oil, and of preparing the way for the due assimilation of the oil by removing dyspepsial conditions and hepatic torpor. The conjoint exhibition of alkalies and bitter tonics is, in relation to the latter circumstances most useful. It is important to review the general nature of the diet, and to increase its meat and milk items when deficient in amount. Plenty of fresh air, extreme cleanliness, and the other hygienics are also requisite. If there be conjoined to ringworm a tendency to or the presence of actual eruption, and the latter be scaly, or the attacked individual present the nervous temperament, arsenic, and iron in combination may be given, but I still prefer the cod-liver oil. I can only repeat that cod-liver oil often fails to do good, or is tardy in so acting, if the practitioner omit to put the digestive organs into due working order so as to assimilate it. The removal of anæmia which obstinately persists in some chronic cases of tinea tonsurans is to be accomplished no less by fresh air and liberal diet than sometimes by iron. There is clearly occasionally a condition of nutrition very favourable to the rapid development of the mycelial threads of the trichophyton vegetation which is negatived by a course of arsenic.

The *second* object in view is *to destroy the parasite*. But in order that the remedies employed to kill the fungus and called parasiticides may be used with success, certain preliminary measures must be taken. It is necessary whenever a case of ringworm comes under treatment, that the treater should obtain a clear view of the whole extent of every patch of disease. The hair should be cut off, with scissors, close to the scalp over the actual diseased area of patches, and for some distance round them, and if the disease is of old standing, or there are many separate places scattered about, it is best to cut *all* the hair off, leaving just a band in front to show from under the cap. Shaving makes the part tender, and causes abrasions that are quickly irritated by parasiticides. Even where the places of disease are small and recent it is better to cut off the hair. Frequently fresh spots spring up around the old ones, and a "clear road" and "no favour" should be the doctor's motto on every occasion. It is necessary to apply the remedies for some distance beyond the actual area of the diseased patches to check the disease in its earliest state of spreading. Having cut short the hair, the practitioner is enabled to see the contrast at once between the upright and shining hairs of health with their connected healthy scalp, and the dull, brittle, twisted and broken-off hairs and the discoloured scaly or inflamed scalp of disease.

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* Practitioner, March, 1870, On the Treatment of Ringworms.

The next thing to be done is to get away as much of the remnants of the diseased hairs and attached and contained fungus as possible. It is very essential that this step should be taken in bad cases of tinea. The removal of the bulk of diseased hairs may be accomplished by epilation or the extraction of the hairs by means of forceps. This statement is in contradiction to the general teaching of authorities on this subject, but it is nevertheless true. Epilation involves trouble and takes time, and many are glad to shirk it altogether. I employ a pair of small forceps with closely-fitting broad blades, and "nibble" as it were at the diseased hairs rapidly, pulling freely at them at the same time. A few minutes will bring away the mass of those portions of the diseased hairs which are above the follicle over an area of an inch or so, and also many of the follicular portions of hairs likewise. It is perfectly true that most of the hairs are brittle, and break away when an attempt is made to pull them out, but still for all that a great quantity of fungus is got away by epilation, which also makes the action of parasiticides more effective. If the hairs are not very loose, and epilation gives pain, it may be advisable to blister the diseased patch once or more, or to use the oil of cade freely to it; by these means the hairs are considerably loosened. Of course much of the fungus will be left behind with portions of the hairs and their roots in the follicle, and as the hairs grow up they must be removed again and again by epilation. In some cases the hairs in the follicles become detached from the hair papillæ, and remain more or less immovable on the follicle as so much dead matter upon which the fungi freely luxuriate. Such hairs appear as swollen dark stubs studding the surface of old standing patches of disease. These stubs should always be extracted. They are always loaded with conidia of large size, and are as so many laboratories, capable of disseminating germs of disease far and wide. As to how long or how many times epilation is to be repeated, I will only say that the microscope and the general aspect of the disease must guide us. If the hairs which spring up over a patch look diseased; if they are brittle and loaded with conidia; if the formation of the root-sheath of the hair is prevented and the root itself be invaded by the fungus, then it is requisite to epilate and use parasiticides again and again. The reader will understand that epilation may not be required in the slightest cases of tinea.

In all cases the head should be well washed with mild soap two or three times a week.

Having fairly exposed all diseased spots, and got bodily away as much of the diseased hair and fungus as possible, the next duty of the practitioner is to apply certain remedies that destroy fungi, and to keep up the action of these upon the scalp until the disease goes. Epilation and the use of parasiticides should be employed more or less in conjunction throughout the whole course of the disease. Now there are two classes of parasiticides (see Formulæ Nos. 215-233), viz., those which blister (vesicating parasiticides), and those which are of milder action (milder parasiticides). The former are used—*but only to small areas*—to make a decided impression upon the disease at the commencement of active treatment, and also in severe cases; the latter are used to keep up parasiticide action generally after the use of the more powerful parasiticides, but they suffice in some instances alone for mild cases of tinea.

In well marked instances of disease, the practitioner having, when necessary, adopted the preliminary preparatory measures before described, may use ordinary vesicating fluid, brushing it lightly over the patch; and when it begins to smart, drying it off, if necessary, with blotting paper. Strong acetic acid may be used, or Coster's paint (Formula 25).

Light haired and fair children, ill nourished, and strumous subjects do not bear blistering at all well. When vesicating parasiticides are used, they should be handled with care. I have said they are to be lightly brushed over the diseased patches, and blotted off when they begin to smart, but they should be used sparingly to an area of an inch or so, and in one or at most two or three smallish places at any one time. They should be used also by the practitioner himself. If much irritation, pain, or swelling follows, a poultice may be applied for an hour or two. The parasiticide is to be reapplied if diseased hairs still remain plugging the follicle, and are distinctly visible to the naked eye, twice or three times to the same patch, but at proper intervals. But in no case till the irritative effect of the former vesication has subsided, and if the diseased area is raw or tender, it should not be treated with the stronger parasiticides. Strong acetic acid or Coster's paste may be used every fourth, fifth, or sixth day. The latter "cakes" on; and when the dark mass which results begins to flake off, the head may be well washed, and the flakes helped to fall off, and the paste reapplied. It should be painted on with a brush, and blotted off if it smarts very much. I often make eight or nine applications at intervals of three, four, or five days, until in fact I get rid of all hairs visible to the naked eye which look diseased. I formerly used an alcoholic solution of bichloride of mercury, and liked it very well, but it is rather a painful application, and Coster's paint or blistering fluid is better.

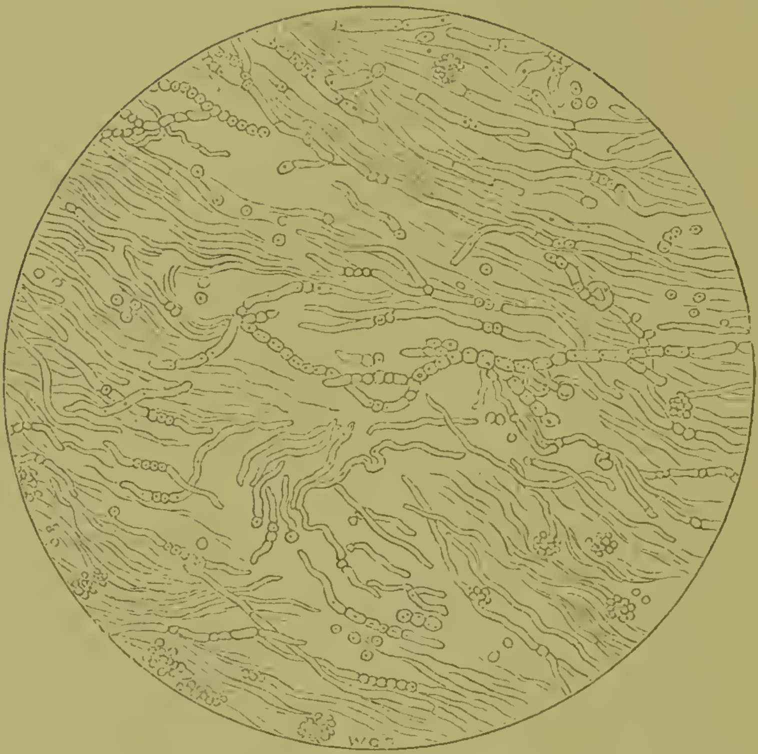
During the time that the head is being treated with the stronger parasiticides, it is well to apply some of the milder ones night and morning. When acetic acid is employed, the head, if extensively affected, may be kept wet with sulphurous acid lotion (one part to six or four of water). But this brings me to the consideration of the use of the weaker or the ordinary parasiticides. These are to be prescribed in slight cases without preparatory treatment, or in severe and extensive cases when the "worst of the disease" has been "got under" by the more powerful measures of epilation and vesication, &c. The object in their use is to bring them into contact with the parasitic elements, and this in the slighter forms of disease is readily done by friction, or by using, as a *medium* for their exhibition, some fluid that penetrates the tissues, such as spirit.

Taking the general run of cases, I think the lesson to be learnt in regard to the employment of parasiticides is the value of friction, with remedies of a moderate strength. I believe this is preferable to the application of strong and active remedies; at least I have seen many bad results from the too long and too frequent use of strong and perhaps vesicating parasiticides. The power to say with success when a strong and when a weaker parasiticide should be used in any given case in the first instance, or during any part of the course of ringworm, is to be obtained by microscopic examination. If the fungus is plentiful and luxuriant, and the disease spreading, potent measures are called for at all times. I do not think so much stress need be laid upon the particular (milder) parasiticide selected for general use. Formulæ 229, 231, 232 are very good ones. Some prefer sulphurous acid lotion throughout. If it be good and kept constantly applied it is very efficacious. But it is difficult to get it properly made, and more difficult to get nurses and mothers to keep lint wetted with it, applied to the head, and a layer of oil silk over the whole, without which it becomes an almost valueless remedy.

Now if the disease is obstinate, or becomes, when all seems going on well, worse, it is necessary to use some strong parasiticide from time to time. As I said before, the microscope must be had recourse to, as *the* guide to the use of remedies. The presence of actively growing fungus calls for active treatment.

The indications that the means adopted for the cure of the disease are operating beneficially are significant and readily perceived. In the first place, when the case is approaching cure, the number of hairs that become opaque and brittle lessen in amount, the scalp looks healthier. The new hairs that appear grow out in a straighter and more natural direction: they are not dry, shrivelled looking, twisted in different directions. They are not brittle, but they are more firmly attached in the follicle. If the microscope be used, the root is seen to be properly forming, and more and more free from fungus elements; and what is of great consequence the root sheaths are beginning to re-form, a sure sign of good progress. But still the practitioner must be on the watch. If notwithstanding the tendency to the approximation of a healthy condition, the hairs are more or less loose in the follicles, and if there are in addition short dark stubs, the case must be carefully watched. The accompanying representation affords an illustration of the mischief which may lurk under a seeming state of health. The figure (fig. 70) represents the appearance seen in the root of

Fig. 70.



a young growing hair, which to all appearance was healthy to the naked eye, but *it came away readily on being pulled out.* The fact being that the shaft was healthy, but the young growing root had become infected by the fungus, some of which must have got access to the follicle from dark "stub" left behind in an adjoining follicle. I think it worth giving, as it illustrates a very practical point. Such a state necessitates the liberal use of a mild parasiticide for some time if its use has been omitted. Sometimes the scalp gets puffy; the application of tincture of iodine every other day does good in these instances.

In some old standing cases of tinea tonsurans, the disease becomes reduced to two or three smallish spots about the crown of the head, and may be felt and seen, according to the nurse's or parent's account, as little "knotty," or "scurfy" places. On examination a little erythematous patch is detected the size of a threepenny piece or more, scaly, or slightly crusted, perhaps tender, and it may be, showing one or more pustular heads, and possibly in some cases, short broken-off hairs containing the fungus elements; if so, it is necessary to get away all the "stubs" or hair stumps, and to use a little weak mercurial or tar ointment for awhile, but the hair stumps are the cause of mischief in such instances.

Overtreated Cases.—Cases of ringworm may not only be treated too little, but too much—that is, *overtreated.* I am constantly in the habit of seeing cases to which have been used ointments "got at the chemists," or recommended perhaps by some friend, and in which the hair follicles suppurate, the tissues of the diseased area being swollen, puffy, in some cases boggy, or actually discharging pus from subcutaneous formation of pus. The whole patch is also in many instances entirely devoid of hair, though red and tender. A hair here and there may be dragged out from a considerable depth as though it had been contained in a follicle half an inch or so long. I know at once what has happened when these cases come into the out-patient's room. Mostly the parasite has been destroyed, but the papilla has not been irrevocably injured, and so the hair re-forms. The hair is at first, before its connexion with the papilla has been loosened, tied down to the bottom of the follicle, whilst the follicle is elongated by the inflammatory swelling and effusion into the tissues, and hence the hair being fixed below, becomes imbedded in the elongated and deepened follicle, and can, as I have said, be pulled out as it were from a great depth. These cases require to be left alone or simply soothed.

A similar condition, but not so intense, is sometimes induced by the too long continued use of ordinary parasiticides, and as happens sometimes in scabies, the original disease may be really cured, and a new one set up. In fact, folliculitis is set up, and the first bad indication is the appearance of little pustular heads studding the surface of a patch of disease that appeared to be making satisfactory progress towards cure. If the microscope be used, it will be noticed that little or no fungus is to be detected, the hair is well formed, the root sheaths also; but there is much inflammatory matter surrounding the hair—that is to say, there is evidence of a return to a healthy state of hair, but also the presence of inflammation without any fungus to explain it. I desire to impress upon my readers the paramount necessity of a constant appeal to microscopic appearances as the best guide to the effects produced by the use of parasiticides. It not unfrequently happens that the use of parasiticides is either not sufficiently pushed where the disease is making rapid progress, or is employed in cases where the results of the irritative action of parasiticides in the follicles are mistaken for a continuance or aggravation of the disease.

The third indication in the treatment of parasitic disease to remove the effects of the ravages of the fungus, is soon dealt with. Eczema and pityriasis are to be dealt with upon ordinary principles, and with ordinary measures. The regrowth of the hair can be accelerated by the use of some stimulant wash, such as is useful for alopecia.

It is also requisite that measures should be taken during treatment of ringworm for preventing the transportation of the disease from spot to spot on the same head by the dissemination of conidia and spore tubes. This is effected by observing scrupulous cleanliness, by using parasiticides to the whole scalp if the disease is severe, and also by oiling the scalp. The collection of scales must likewise be prevented.

RINGWORM IN SCHOOLS.*

Troublesome and disappointing as the management of ringworm in ordinary practice is, it is infinitely more so in schools and public institutions. The consequences of error in regard to ringworm cases in public institutions are in some points of much more serious account. A mistake, for example, in deciding when complete recovery is established is not only often most injurious to the reputation of the practitioner, and of course disappointing to parents, but cruel to the principal of the school concerned, whom it involves in great annoyance and sometimes serious pecuniary loss. One of the chief questions upon which a decision is requested is the fitness or unfitness of those who are supposed to be convalescent to go back to school, and to remingle with their playmates.

The whole question of ringworm in public institutions has recently been prominently forced upon my attention in the case of a remarkable outbreak of the disease, comprising some 300 cases in all, in a public institution near London. I was requested to investigate and report upon the epidemic. With the facts fresh in my mind I shall, perhaps, be doing good service to my readers if I reproduce some special remarks on the subject of ringworm in schools, which I recently penned elsewhere, under the heads of—

1. Its origin and dissemination.

2. The treatment of the disease when introduced, as regards (*a*) the actually diseased; (*b*) the surroundings and belongings of the attacked.

3. The preventive treatment—as regards (*a*) its re-importation through the apparently convalescent; (*b*) its rekindling from other causes.

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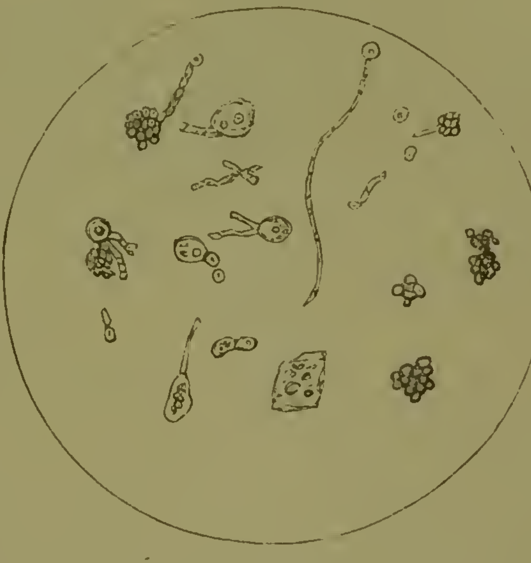
* Reprinted from the Lancet, Jan. 1872.

I. Origin and Dissemination.—*Origin.* Firstly, I do not understand that a school is properly managed unless every child admitted is shown to be free from ringworm of the head (tinea tonsurans) and ringworm of the body (tinea circinata), either as certified by a medical practitioner, or by a careful examination at the time of admission by some competent person. A matron or good nurse can have no difficulty in preventing the introduction of ringworm into the school under her management as the rule. Every child with ringworm (tinea tonsurans) has certain "scurfy patches" or spots where the hair looks shrivelled or unhealthy. Such appearances and red scurfy patches are on the body readily detected by any one who has a pair of eyes, and they should suffice to excite suspicion and lead to medical examination. Secondly, every week at least, a careful inspection of heads should be made in schools. The heads of girls should especially be searched on account of their long hair. In this way the earliest signs of disease must be detected. *Ringworm of the body* (tinea circinata) should be recognised more decidedly than it is as the frequent source from whence is derived the fungus that causes ringworm of the head, and should be dealt with accordingly.

Dissemination.—Once introduced into schools, ringworm is spread in several ways: (*a*) By neglect, of course; (*b*) by actual contact of the healthy with the diseased; (*c*) by the use in common of towels and brushes by the diseased and healthy; (*d*) by the air of the institution, which, under certain circumstances, is loaded with the germs of the fungus—trichophyton tonsurans.

I am particularly anxious to call special attention to the last point. When I came to collect the dust deposited from the air in the wards of the institution in which the outbreak of ringworm before referred to occurred, I found that it contained fungus elements in abundance. This observation I believe to be a novel one. The achorion has been detected in the air passing over the heads of children affected with favus, I know; but I speak of the existence of the trichophyton in the air when no artificial means have been adopted to disseminate it there. Fig. 71 gives the appearances seen, with a one-fifth inch object-glass at four P.M., in the dust which had collected upon a slide between that time on a certain day and the evening before. I need not say care was taken to avoid all fallacies. It will be noticed that epithelial scales were found in the dust, and that is why I give the sketch on next page, and it is only a sketch. No doubt the scratching of diseased places practised by the patients explains the presence of those several elements in the dust. I presume it was the fact of so many children being diseased—I saw 121 together at the time of my visit—at one and the same time that gave rise to such a plentiful supply of fungus; for I imagine that we should have a difficulty in detecting the fungus in the dust of a room where only a *few* cases of ringworm were present. I cannot doubt that where ringworm of the body (tinea circinata) only is present, particles of cuticle and fungus may be thrown off by scratching, and so give rise by the development of germs which fall on the head, to tinea tonsurans. In all cases therefore an endeavour should be made to neutralize this source of dissemination by particularly enforcing the isolation of the infected, *including those who suffer only from ringworm of the body*, and to disinfect the air where there is reason to think fungus germs exist in it.

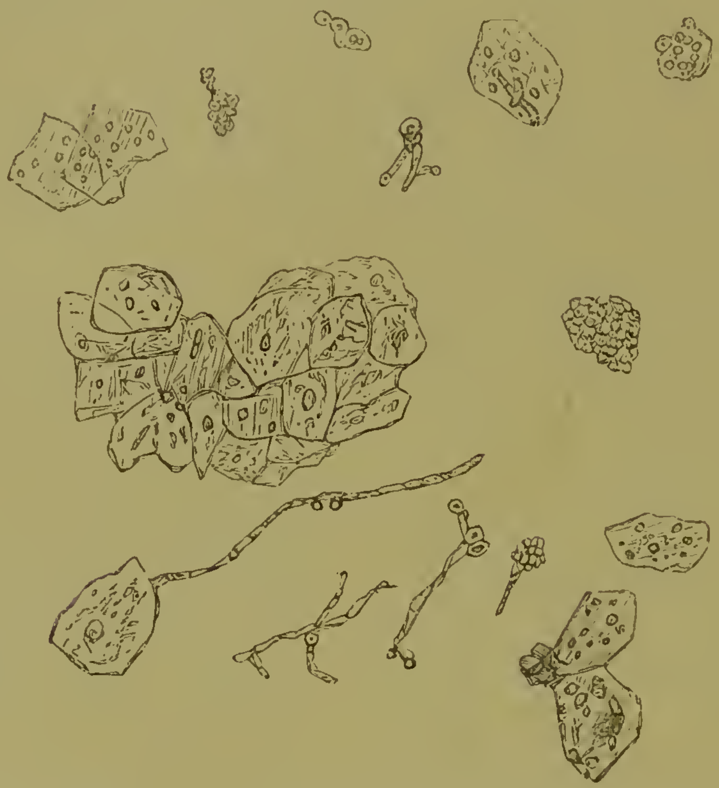
Fig. 71.



II. Treatment.—(*a*) *As regards the actually diseased.*—Strict isolation is the first thing to accomplish. I will only say on this point that cases of *ringworm of the body* must be isolated. I think this is of essential importance in the case of schools. It is not, however, thought of any moment as the rule. Where a number of cases occur, it is better to separate instances of very bad and extensive disease from slight *new* cases and convalescents, for the simple reason that active treatment may at once annihilate the disease in the former, and in the new cases and convalescents fresh implantations over the, in the main, healthy area of the scalp may be taking place from contact with bad cases of tinea. I would, of course, only adopt this plan where the cases of disease are very numerous—say thirty, forty, and fifty or more.

There are, next, certain general considerations to be taken account of. Attention to the dietary is one; for the underfed, and ill-nourished, and ill-kept furnish the most appropriate nidus for ringworm. All deficiency in meat should be rectified, and in case the attacked or the non-infected look sickly or pallid, the allowance of meat and fresh vegetables should be increased and supplemented by iron and cod-liver oil. So, again, the cubic space allotted to each child should be ample, ventilation free, and cleanliness enforced with exceptional strictness. One word more as regards the general health of children. If, with a rigorous system of inspection in constant operation, many cases rapidly appear, and, in spite of hygienic measures, spread, the children furnish clearly a very suitable soil, and the dietary of the children should be looked to. If ringworm becomes epidemic, with a *bad system of inspection*, it implies simply neglect, of course. Here isolation is the main thing needed to protect the healthy, and not feeding up.

Fig. 72.



The treatment is essentially the same as that already described as suited to ordinary cases of ringworm. In all cases in schools the hair should be cut short, close to the scalp.

(*b*) *As regards the surroundings and belongings of the attacked.*—It is scarcely necessary to do more than refer to the necessity of thoroughly cleansing the brushes, combs, and towels of the diseased, seeing that these are not used in common by the healthy and the infected. Towels should be well boiled. To one novel point I must direct special attention. It is the disinfection of the air of the wards in which a large number of cases of ringworm have been. My recent observations show that the fungus germs are floating in the air, and though I had no experience to go upon, because the observation is a novel one, yet I have no hesitation in saying that the air of the wards should be disinfected by burning sulphur if, after complete isolation has been practised where many cases of ringworm have occurred, other instances of disease still continue to appear amongst the previously healthy.

III. The Prevention of new Outbreaks.—(*a*) *As regards the reimportation by those apparently convalescent.*—No more puzzling problem is presented to the practitioner than that of saying when a child "is well of ringworm," and "fit to go back to school." I err on the side of caution if there is the least doubt, and advise that the same course be taken by others. When a child is well—that is to say, incapable of reimporting or redisseminating the disease amongst his fellows—there will be present certain naked eye characters and microscopic appearances. The hair will be growing vigorously and naturally on the original sites of the disease; there will be no scurfiness, no broken-off hairs, and the structure of the hair and its sheaths will be properly developed and free from fungus elements. If the hair is dull and dry, suspicion should be excited; and if the suspected surface is *studded over with short broken-off hairs* (*readily overlooked*), there is still disease present. The fungus will be formed in abundance in the short broken-off hairs. As a rough guide, this is the best. A child any portion of whose scalp is studded with the little dark points of short broken-off hairs, should be regarded as unfit to go amongst his fellows. This is the rule I observed. But no one can arrive at a really safe conclusion in some cases without a microscopical examination. If the root is well formed, and the hair sheaths likewise; if fenestrated membrane and root sheath can be seen, and no fungus detected, than all is right. Of course, fungus in any abundance is at once discovered. The doubtful cases are those in which the root seems healthy, but the shaft of the pulled-out hair is observed to be surrounded at its follicular portion above the root with epithelial and exudation matter. This may be an indication that irritation is being set up by the remedies, the ringworm itself being well. I see many cases of this kind, and in them the roots and surrounding structures, and hair-shaft, are healthily formed, whilst no fungus elements are to be detected in the material surrounding the hair. The scalp in these cases is tender, more or less swollen, and reddened, the hair at the same time growing well and vigorously. Perhaps the plainest and easiest guide to disease still existing is the presence of short broken-off hairs.

(*b*) *Rekindling of the disease from special causes.*—In order that ringworm may not "break out afresh" in schools, the non-infected must observe all those directions which were referred to under the head of "dissemination of the disease." Especially it is important to keep heads perfectly clean by frequent washings, and to keep them fairly greased or oiled. To this latter point I attach much importance.

This, in short, is a sketch of the means to be followed in managing ringworm in schools. There are those who think the use of a weak parasiticide to the healthy is advisable. Well, there can be no objection to sponging the heads, even daily, of the healthy with diluted sulphurous acid, one part to six of water, or, better, with diluted acetic acid, one part to four or six of water.

TINEA KERION.

This phase of ringworm generally commences like ordinary tinea tonsurans, and the fungus is the trichophyton. The glands of the skin become involved with the hair follicles, and pour out a mucoid secretion. It was to this form of disease that Celsus gave the term kerion in describing it in his fifth book.

The disease, which consists of large or several small patches, may commence suddenly, with more or less loss of hair. The hair breaks off from over a circular area of greater or less extent, when general swelling of the textures speedily follows. These swellings are tender, and they also look uneven and feel boggy without there being pus present, and after awhile a number of apparent openings give exit to a viscid discharge. They stud the surface of the patch and are inflamed follicles. The hairs are loosened and diseased as in tinea tonsurans. There is, however, no true suppuration. The fluid discharge reminds one of the viscid juice of the mistletoe berry. The glands of the neck are sometimes enlarged, and very tender; they may even suppurate.

The characters of kerion are therefore: (*a*) general prominence of the patch; (*b*) its perforation with foramina—*i.e.*, the mouths of the hair follicles; (*c*) the outpouring of a mucoid fluid; (*d*) the non-suppuration of the swelling; (*e*) the looseness of the hairs; (*f*) the after-baldness; (*g*) the presence of a fungus in the hairs and follicles.

The most careful inquiry has failed, in my cases, to detect the evidence of the application of irritants as a cause of the unusual swelling and exudation. The peculiar sticky secretion is albuminous lymph. It seems to me that the fungus causes inflammation of the follicular sheath, that a large amount of irritation is set up, the glands of the hair-follicles are involved, and mucoid fluid is poured out. This condition may run on to threatened suppuration. In plica polonica a similar kind of exudation is poured out into the hair-follicle, and infiltrates even the hair-shaft.

I regard this kerion, so accurately depicted as to external features by Celsus, as nothing more or less than tinea tonsurans which has become complicated by irritation, swelling and prominence of the hair-follicles and the attached glands, detachment of their follicular sheaths, and exudation of albuminous lymph. It is a wonder that this is not a more frequent condition in tinea tonsurans. It is not unlike the state of scalp produced by the application of irritants to tinea tonsurans before described under the head of that disease, only in that condition the follicle is choked with inflammatory pus products, and in kerion the secretion is *mucoid*, whilst the hair-sheaths come away bodily, as it were; but, as I have said, I cannot trace the disease to such a cause as irritation.

I have long been acquainted, and indeed was the first to demonstrate the presence of the trichophyton in the disease, and I have been surprised at the amount of fungus present in some instances. Mr. Wilson notices that it was complicated by tinea circinata in two out of fourteen cases, and tinea tonsurans in one case; whilst a brother of one of the patients had the former affection, and a sister of another the latter. In one instance, kerion was observed to develop out of tinea tonsurans.

This tinea kerion has been made the subject of an excellent description *quoad* naked eye appearances by Dr. Dubini,* who styled it Vespajus del Capillizio (*i.e.* Wasp's Nest of the hairy scalp). Dubini remarks that he has not found it noticed in dermatological works, but he has been anticipated in his description of it by Celsus, by Wilson, and myself; and he fails, moreover, to recognise its parasitic nature.

The plan of Treatment that suggests itself to the mind in the first instance would seem to be the employment of decidedly emollient remedies—poultices and soothing applications—to subdue the inflammation. But this I believe to be an unsound plan; for as in scabies complicated by many and various eruptions it is proper to treat the scabies, and attempt to kill the acarus at all hazards, so in kerion it is right to destroy fungus as the first step towards a cure. The plan is to pull out all the hairs. This will generally remove the greater portion of the fungus, for the hair and follicular lining come away together, and necessarily the conidia imbedded therein. Then mild parasiticides may be applied, ex., weak bichloride of mercury solution, or carbonic acid lotion, and the disease will rapidly mend.

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* Giornale Italiano delle Malattie Veneree e delle Malattie della Pelle, 1866, p. 7.

Apparent severe inflammatory action should not deter us from destroying the true cause of mischief—the fungus. These cases are no new acquaintances of mine, and therefore I speak with some confidence.

Finally, it is important to add one practical remark. I have seen these cases of kerion mistaken for subcutaneous abscess (nothing more likely and nothing to be more avoided), and accordingly the swelling has been opened by the lancet, not, however, with any good result, for troublesome abscess has followed the procedure, with suppuration induced by the admission of air into the tissues.

TINEA CIRCINATA (TINEA CORPORIS), OR RINGWORM OF THE GENERAL SURFACE.

General remarks.—I have already, under the head of tinea tonsurans, stated that tinea circinata differs in reality from that disease only on account of its occurring on non-hairy parts, and have shown that when tinea circinata travels on to hairy from non-hairy parts, it assumes the characters of tinea tonsurans. I am about to describe it, however, under a separate head, because its actual naked-eye features are so distinct and peculiar; it lacks the appearances produced by the diseased hairs of tinea tonsurans.

When a fungus becomes implanted upon the surface of the body it excites more or less irritation. This is followed by hyperæmia and effusion of serosity, which may produce vesiculation. If the effusion be slight in amount, scarcely so much as uplifting of the cuticle occurs, but only some slight hyperæmia, and consequent desquamation: so there may result an herpetic looking patch, or merely a red rough desquamating surface. If the irritation be very great, the characters of herpes may be more than usually marked, or even those of eczema may be presented by the disease. In other words, the fungus will excite a varying degree of localized inflammation, and the aspect of the disease will vary accordingly. Further, some persons furnish a very suitable soil for parasitic growth, with or without a disposition to eczema or other eruptions. A little fungus may excite a good deal of change, so that the amount of fungus and eruption bear no necessary proportion.

But there are other considerations to be taken into account in attempting to understand the characters of tinea circinata.

When the fungus grows it spreads equally in all directions upon the human surface, as it does in the case of the "fairy rings," by sending out mycelial threads.

Hence the irritation or inflammation will extend equally in all directions; or, in other words, the eruption will be circular, and this indeed is one of the chief characteristics of tinea circinata. Then again the fungus, as it grows, is most active where its mycelial threads are actively forming and disturbing the tissues. It there does most mischief. The skin gets accustomed to its presence in the oldest parts of the patch, where the fungus assumes the cellular form, which does not irritate the tissues so much as the sprouting mycelium: hence redness, swelling, and vesiculation will be most marked at the circumference and less in the central part of the disease, conditions that constitute other very suggestive features of tinea again. The character of the fungus present will influence the aspect of the disease. If the conidial form prevail, the disease will assume less of the irritant or inflammatory aspect, and will at least not spread so rapidly as when the mycelial form is present. Now it will be observed, when I come to speak of tinea circinata transmitted from animals, ex., the horse and calf, to man, that the characters of the transmitted disease are, as it were, exaggerated, this being explained by the fact that the fungus is of a very luxuriant kind in these animals at times, and, transferred to the skin of man, irritates greatly. The mycelial form is found specially well marked in all cases in which heat and moisture are present, and hence in cases of tinea (eczema marginatum of the Germans) about the fork, and in ringworm of the surface that occurs in India and hot climates generally—ex., Burmese ringworm. Here the mycelium runs riot, as it were, at times, amongst the tissues: and red rings, rapidly enlarging over a wide area, are constantly seen in the disease.

Now I make these remarks with the object of leading the reader to comprehend the matter of tinea circinata from anything but the narrow point of view generally taken by authorities and writers on the subject. Its cause is certain, but the effects of the growth of the fungus vary greatly, as I have explained above; that is to say, tinea circinata is not uniform in aspect, but varies in that respect greatly.

It was usual a few years since to call the disease *herpes circinata*, which term signified that the eruption is herpetic in character. The fact of vesicles occurring depends solely upon the accident of the fungus producing such a degree of irritation as will be followed by a certain amount of effusion. But the fungus may produce less or more than this amount of irritation. I would define tinea circinata then as *circular patches of inflammation* induced by the growth equally in all directions of the *trichophyton tonsurans* upon the surface of the body, and *varying in severity* according to the *degree of luxuriance of the fungus*, and the *degree of susceptibility* of the skin of the attacked to inflame.

I propose to describe first of all the ordinary or typical aspect, and secondly, uncommon phases of tinea circinata, such as general parasitic tinea, parasitic eczema, Burmese ringworm, eczema marginatum, Malabar itch, Chinese itch, &c.

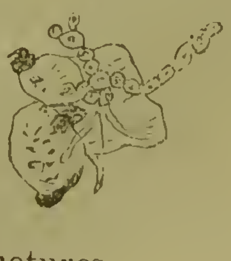
It will be seen that I include a number of diseases hitherto regarded as distinct from tinea circinata under that head. Of the correctness of this step I have no shadow of doubt, and it really saves a vast addition to the vocabulary of the dermatologist.

The ordinary form of tinea circinata.—In its most common form tinea circinata consists generally of little circular patches of what appears to be ill-developed herpes, which becomes the seat of furfuraceous desquamation and the scales of which are invaded by a fungus. The whole is somewhat elevated. The edge is often distinctly vesicular, and the patch increases in area by centrifugal growth. Itching is a common and marked symptom. The disease is mostly seen on the face, neck, breast, and upper limbs. It has been seen to travel upwards to the head, and become tinea tonsurans. The centre of the patch may be healthy, a ring of disease alone existing, and this ring may be vesicular or papular. It is sometimes epidemic in public institutions, in frequent co-existence with tinea tonsurans of the scalp—one disease giving birth to the other. The fungus which invades the hairs as well as the epithelial scales (see figs. 68, 77), is the *trichophyton tonsurans.* In some cases all that exists is a little slight red distinctly scurfy patch, looking less than an herpes, and like a fading eczema. The patch originally appears of the size of a split pea; then gradually enlarges, retains the circular form, and becomes faintly scaly. All that results is this red, circular, itchy, slightly scurfy spot. The disease is mistaken as the rule for "pityriasis," or "dry eczema." It is a primary form of eruption; it may be associated with well-marked tinea, two or more persons in the same family being affected at the same time, whilst parasitic elements are detected in the scales with the exercise of due care.

The nails may be attacked in tinea circinata, but I will speak of this under the head of *onychomycosis,* or onychia parasitica.

Uncommon or Exceptional Forms of Tinea Circinata.—The cases to which I will first refer are those which consist of one or several large, more or less circular or oval patches, often seated about the back of the hand or the front of the wrist, which have the aspect of an eczema, but without the infiltration and the free crusting, but with a well-defined edge. They commence as ordinary tinea circinata, and gradually enlarge till they reach the size of a five-shilling piece, or the palm of the hand, and assume the aspect of eczema, and they are particularly itchy. They rapidly get well under the influence of parasiticides locally applied. I have called attention to these cases in several places and on several occasions. It may be difficult to detect the fungus in these cases; and this leads me to observe that it by no means follows that the fungus is plentiful. In the eczematously disposed a very little fungus may excite a great deal of eruption, and the observer may search in vain for it in the seat of the secondary eczema, whilst it exists, plentifully even, in limited spots. But when found it will be distinct, well formed, if in small bits, as represented in fig. 73—which illustrates likewise another fact, that the fungus in these cases is very intimately connected with the structures in which it is found—an indication that its presence is not accidental. My friend Mr. Tweedy, has examined a number of these cases of tinea, which have assumed the aspect of eczema, in the out-patients' department of University College Hospital, and amply demonstrated the presence of fungus elements in the diseased structures.

Fig. 73.



I have noticed that this exaggerated form of tinea circinata, consisting of circular patches, the size of from that of a shilling to that of a crownpiece, may even occur pretty generally over the body. It looks like an itchy eczema, of circular form; indeed, these more severe forms, with well-defined margins, which tend to crust over like an eczema, might be termed parasitic eczema; and, in fact, the fungus acts as an ordinary irritant, and excites eczema.

Another set of cases in which the features of tinea circinata have an exaggerated aspect, and in which the diseased surface appears to be studded over even with pustules in connexion with much swelling of the patches, are those cases which are occasioned by the transmission of the disease from the horse and the calf to man. But I will speak of these cases in detail presently, under a separate head, in dealing with the question of the transmission of tinea from animals to men.

In the above phases, where the herpetic or vesicular character tends to predominate, the mycelial phase of fungus is found, but not in such luxuriant form as in the cases of tinea circinata —connected with the presence especially, of more than the usual amount of heat and moisture in the skin attacked—about to be described under the terms eczema marginatum, Burmese ringworm, &c. The reader will recollect that I use these designations merely as synonyms, holding strongly to the view that the term tinea circinata ought to include all those forms of disease to which they are applied.

Eczema marginatum is tinea circinata occurring about the fork of the legs, and modified in aspect in consequence of the presence of heat and moisture in exceptional amount, and the luxuriant character of the mycelium of the fungus. It has been elaborately described of late by German writers,* Dr. McCall Anderson, and others. In the year 1864 Köbner described the fungus, and inoculating his own arm with it, produced, as he asserted, tinea circinata. Hebra thereupon questioned Köbner's diagnosis, regarding the parasite as an accidental occurrence in the so-called eczema marginatum, but Pick's observations proved Köbner to be right. The disease, of which I have seen a great deal, begins as a red, scurfy, itchy spot, generally near the junction of the thigh and the scrotum; and as it increases in extent, it festoons down over the thigh, the edge being well defined and often papular, the centre fading and assuming a brownish hue, and giving off scales on scratching. The disease may spread to the pubic region, the axillæ, and the hairy part of the chest. In the fork of the thigh there are more heat and moisture present than in other parts of the body, and intertrigo is excited sometimes by the fungus: this furnishes conditions all the more favourable for the development of the fungus. If a portion of the scales be scraped off and examined under the microscope the fungus is readily detected. It consists of freely-branching mycelium, and oftentimes collections of spores, and thus closely resembles the fungus of tinea versicolor. The fungus represented in fig. 74 was found in the scales of a well-marked case of so called eczema marginatum occurring in the usual situation.

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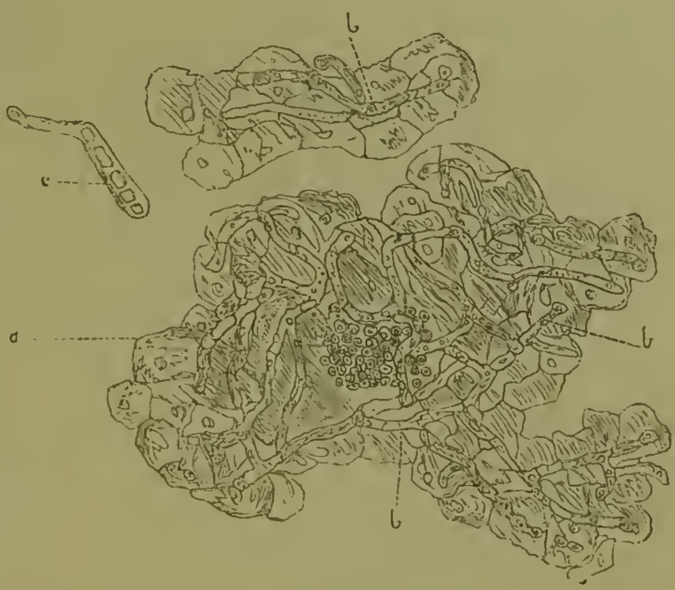
* Das Ekzema Marginatum, eine Studie über die Natur und das Wesen dieser Krankheit, von Dr. P. J. Pick; Arch. für Derm. und Syph., i. i. p. 61. Also Hebra, Ueber den Befund von Pilzen, bei Ekzema Marginatum, von Prof. Hebra, Arch. für Derm. und Syph., i. ii. p. 163. Also Zur Verstandigung über das so Genannte Ekzema Marginatum, von Dr. P. J. Pick; Arch. für Derm. und Syph., i. iii. p. 443.

Fig. 74.



Fungus of so-called eczema marginatum. *a.* Epithelial scales. *b.* Mycelial threads. *c.* Germinating conidia. × 300

Eczema marginatum presents the same features as Burmese ringworm, to be referred to directly. It is not of course so extensive or marked a form of eruption as Burmese ringworm, as the rule, but I remember one case of the disease, sent to me by Dr. Evans, of Gloucester, in a gentleman who had not been out of England, in whom large and well-marked patches of disease, occurred over the pubic, perineal, gluteal, axillary, and pectoral regions, as extensively as in any case of Burmese ringworm that I have seen. This gentleman perspired immensely, and insisted upon clothing himself in flannel, so that heat and moisture were present in force to give the fungus the best chance of luxuriating. But as Burmese ringworm is a matter of some clinical interest, I append the description of it, which I gave in another place recently.*

Burmese Ringworm.—In various parts of the East many local designations are given to ringworm of the surface of the body (tinea circinata, as I have called it). There, in fact, would appear to exist in different places peculiar diseases, apparently different, but in reality one and the same in nature. Chinese, Burmese, and Tokelau ringworm are examples in question. It is pretty certain that these affections are nothing more or less than ordinary ringworm of the body, such as we have in Europe, determined in their occurrence to certain parts of the body by peculiar circumstances, and assuming characters somewhat different from those observed in the disease as it exists in colder climates, in consequence of the greater luxuriance of the parasite, consequent upon the presence in the one case of a greater amount of heat and moisture, which are favourable to the development and speed the growth of fungi.

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* Scheme for Obtaining a Better Knowledge of the Endemic Skin Diseases of India. By Dr. T. Fox and Dr. Farquhar. India Office, 1872.

Burmese ringworm, of which I have had many cases under my care, occurs about the fork of the thigh, chiefly where heat and moisture are more influential than elsewhere, and in England I have seen the disease, in those who have returned from India, in two chief forms, or rather in two different degrees of extensiveness. In the one the disease consists in *red itchy rings* affecting the pubic region, the fork of the thigh, extending over the buttocks, and more or less about the axillæ, the front part of the chest, and the parts covered by hair about the navel. The rings vary in size from that of a shilling to that of the palm of the hand nearly; the colour is bright, the rings are itchy, and their surface is to some extent raised, and they leave behind furfuraceous surfaces. The aspect may be altered by scratching, so that the integuments become excoriated and infiltrated. All this means that the fungus is made up of actively-growing mycelial threads that sprout freely and forcibly amid the epithelial layers. Sometimes the disease seems to disappear, and only slight scaly, itchy, scurfy patches remain behind. Again it increases and reappears in all its intensity. I have seen it *limited to the face*, and festooning down from the cheek to the neck. At the time of writing I have under care a gentleman with the face solely affected. He has just returned from Central America, and saw Devergie and Bazin in Paris, one of whom stated that the disease was due to shaving (Bazin), and the other to the action of the sun (Devergie). I detected under the microscope luxuriant fungus elements.

In the other form or degree, the disease is less erythematous, does not take on the ring form, and appears to be limited to the fork of the thigh and the parts about it. There is a red, scaly, itchy surface, which festoons a greater or less distance down over the thigh in front, and attacks the perineum and the buttocks to some extent. The disease begins as a small itchy scurfy spot—that is to say, the fungus does not luxuriate so freely and so produce red rings—and as this spot spreads the centre pales or rather gets brownish; the red edge extending. The edge is sometimes distinctly papular, and very well defined. The papules are mostly abortive vesicles, but even vesicles may be visible. If we pass the hand over the patches they feel thickened, dry, and harsh. If the disease is much scratched and irritated it may appear eczematous, or small boils may appear, or there may be a certain amount of lymph infiltration as the result of the irritation, and in such a form as to give the patch an uneven, somewhat knotty aspect, and a very rough feel. The disease may, after a while, break up into islets—one part getting better, another becoming worse, or remaining *in statu quo*. The disease as a whole often, if left undisturbed, gets "better and worse." It is always itchy, especially with the warmth of the bed, and the skin is, in chronic cases, much discoloured. The fact that the disease occurs where heat and moisture are present accounts for the amount of change induced, and also the variation from ordinary tinea circinata, from which it differs mainly in being accompanied by more infiltration. In fact, this description is that of the "eczema marginatum" of the Germans.

Now it is easy to see that the occurrence of bright red rings in eczema marginatum and Burmese ringworm is only a stage of the disease, occurring when and where the fungus happens to find itself in such a condition as to be able to sprout beneath the epithelial tissues far and wide, and that very rapidly. Sometimes the same red rings are observed in the onset of tinea versicolor, and I just now called attention to their occurrence in a case of eczema marginatum. But in most cases there is a more gradual growth of fungus, and the production of scurfy patches.

Figure 75 is a representation of the mycelial threads of the fungus—the trichophyton—as seen in the scrapings from a case of Burmese ringworm recently under my treatment. The sketch is a rough one, but it will serve my purpose very well here.

Malabar Itch, as far as I can make out, is the same disease as Burmese ringworm.

Tokelau Ringworm.—Dr. Turner* speaks of a form of disease called Tokelau ringworm, or *Le Pita,* after the name in the one case of a man—Peter—who is said to have brought the disease to Samoa, and in the other, the district from whence it came (Tokelau). It is said to be like ichthyosis, but is classed by Dr. Turner with *herpes desquamans,* and is probably a tinea circinata.

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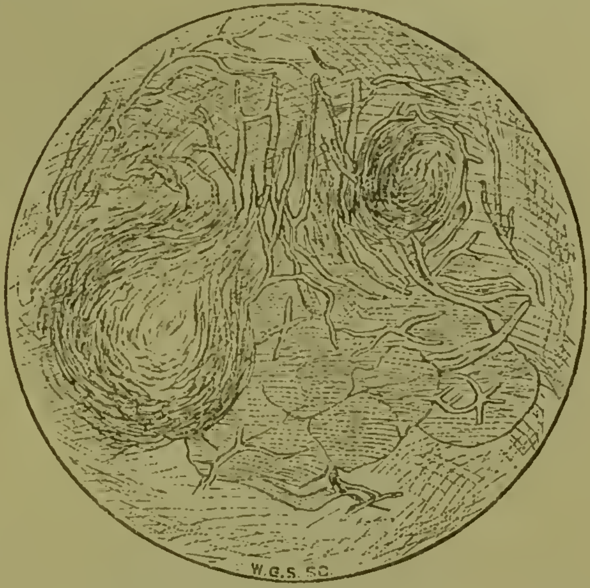
* Report of Samoan Medical Mission, dated Samoa, October, 1869.

The reader will now understand that *tinea circinata,* when it occurs in the fork of the thigh or is developed under the influence of heat and moisture, as in hot climates, is accompanied by a luxuriant growth of mycelium, which, spreading rapidly amongst the tissues, gives rise to certain special appearances; but these constitute no ground for instituting new diseases to be designated by the terms eczema marginatum, Burmese ringworm, and the like. The term tinea circinata includes all these forms of ringworm. It is necessary only to remember that tinea varies somewhat with the locality of the body attacked, and variations in concomitant conditions, particularly as regards the presence of heat and moisture.

Fig. 75.



Trichophyton tonsurans, from a case of Burmese ringworm.

Tinea Circinata Transmitted from Animals to Man.—I have, in speaking of favus and tinea tonsurans, noticed the apparent production of tinea circinata in man, from favus in animals; and the development of tinea tonsurans from tinea circinata. I have now to speak of the production of tinea circinata in man from contact with animals affected by these diseases. It is well known that ringworm of the surface may be transmitted from the calf and cow to man. I very recently communicated a series of most interesting facts to the Clinical Society* upon the transmission of tinea circinata from the horse to man. The facts are of great clinical interest and there are two points I may briefly notice: the first is the transmission from the *horse* to man, which is not common in my experience—whilst recorded cases are not frequently to be met with; and the second is, that the transmitted disease possesses features of an exaggerated tinea. The tinea circinata was transmitted to seven men from a certain pony, whose body was, when I saw it, covered all over with discoloured spots of a fairly circular outline, varying in size from that of a shilling to large irregular patches the size of the palm of the hand and more, the hairs of which had become altered in texture and direction. They were curled and bent out of their proper, and into wholly different, directions. They were loosened, and readily came away from the follicle; some broke off; they were also very opaque, and the surface of the skin was covered over by a mealy powder, thickly set about the hairs. In fact, all the characters of tinea tonsurans—ringworm of the hairy scalp of man—were present, as shown by microscopical examination. The accompanying illustration (fig. 76) shows the fungus in its mycelial and sporular form invading a small portion cut out of the shaft of one of the hairs of the horse. A, A, A are germinating spores; they had an average diameter of ·0012 inch.

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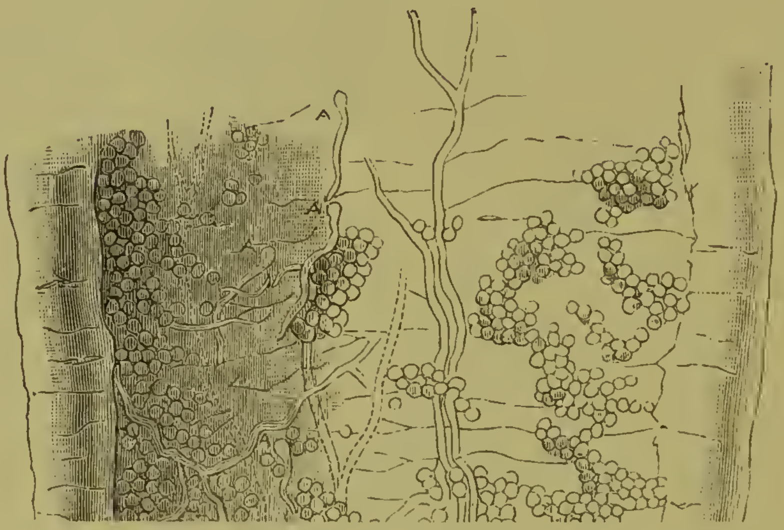
* Clinical Society's Transactions, vol. iv.

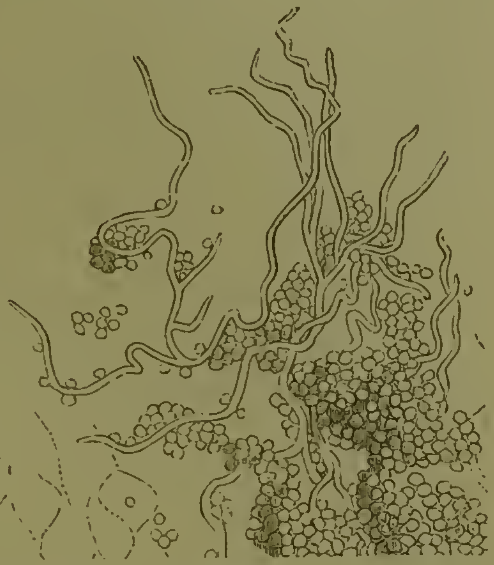
Now taking all the cases of the seven men who were infected by *tinea circinata* from the tinea tonsurans of the pony, together, they had these peculiarities in common: the patches varied in size from that of a shilling to the area of the top of an ordinary wine-glass, and they were seated about the arms and back of the hands chiefly.

Fig. 76.



The inflammatory aspect of the patches was more severe, the infiltration more decided, the extent of the eruption greater than usual, and the herpetic character, when the earlier stages were observed, not at all abortive, but much more distinct than usual. Moreover, the fungus, luxuriating amid the textures of the skin, set up so much irritation as to induce pustulation in place of the ordinary herpetic vesiculation in certain of the patches. In fact, the features of tinea circinata were not only peculiarly well marked, but exaggerated, and this was explained by the plentiful implantation of the fungus germs in unusual abundance and luxuriance, and the setting up by its vigorous growth of an unusual amount of irritation. So that, in fact, the disease looked like a well-defined eczema, in circular patches, and might have readily been mistaken for the same. Fig. 77 represents a portion of the epithelium from a patch on the arm of the man who looked after and always groomed the pony, and it will be observed that it shows a most luxuriant growth of fungus in the mycelial and the conidial forms. There were miniature threads and also mature threads in abundance, breaking up into reproductive bodies, or conidia.

Fig. 77.



"The transmission of so-called epizootic herpes, as ringworm of animals is called, from the *calf* and the *ox* to man, giving rise to tinea circinata of the non-hairy parts in adults, has been commonly noticed, especially in Ireland, notably in Cavan and Monaghan, the disease attacking the parts about the eyes, ears, the neck, the withers and limbs of calves, and I suppose that children may be, and no doubt are, affected with tinea tonsurans from contact with adults so attacked by tinea circinata, though there is no specific evidence on this point; and a good paper on the subject has appeared, from the pen of Dr. Tuckwell,* who details cases of tinea of the surface, of the head, and of parasitic sycosis, communicated by tinea from the cow, in which the characters of those of an exaggerated tinea, as in my cases above described, were present. But I am not able to put my hand upon any save a few recorded instances in which man has become infected from the *horse*—an occurrence unknown at the Veterinary College. Mr. J. R. Dobson† mentions the occurrence, and Bazin has observed the same in five men affected from a certain horse. A very instructive history of an epidemic of tinea tonsurans, or as it was called epizootic herpes, occurring a few years since amongst some 300 mules and horses in the Valley of Borne, in Savoy, is given by Professor Papa, who was instructed to investigate the circumstances connected with the epidemic. A number of instances are recorded in which the disease was communicated direct from the horse to man, and from man to man, man to wife, and wife to infant. The disease attacked the horses and mules about the head, the neck, withers, shoulders, and loins. It was itchy, and at first thought to be due to acari, but its real nature soon became apparent. In the cases observed by Professor Papa the communicated disease in the non-hairy parts of the men was an exaggeration, so to speak, of ordinary so-called herpes circinatus, or properly tinea circinata, as in the cases which have just come under my observation, though this peculiarity was not pointed out by the Professor. The patches of disease were, I notice, said to be studded over here and there with small pustular points, indicative, as before observed, of a more than usual amount of irritant, and produced by a plentiful sowing of fungus elements upon the skin, and I take it that the reason why the disease was so certainly conveyed to man from the white pony, whose case I first noticed, is that the fungus elements were so very abundant and so very luxuriant—a point to be remembered in relation to the statement that as a rule ringworm in horses cannot be shown to communicate itself to men.

"The production of parasitic sycosis in one of the men in the cases I have put on record, is very interesting, and furnishes one more strong fact in proof of what has been held of late by many—the identity, making allowance for difference of seat—of tinea tonsurans, tinea circinata, and tinea sycosis."

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* St. Bartholomew's Hospital Reports, vol. vii.

† In his work on The Ox; his Diseases, and their Treatment, published in 1864.

Mr. Fleming,* in commenting upon the above cases, mentions several instances quoted by authorities, in which tinea tonsurans was transmitted from *horse* to *man*.

Diagnosis.—In arriving at a diagnosis of tinea circinata the student or practitioner must always bear in mind one or two points; firstly, that as the rule the disease begins as a small itchy red spot and assumes rapidly the circular form, which it preserves; that the edge of the patch is well defined, and that the intensity of the inflammatory occurrences vary according as the fungus grows rapidly or tardily, and the conidial or mycelial form predominates.

Tinea circinata may be confounded with eczema, psoriasis, or pityriasis, but it has in reality no marked *scaliness*, as these have. Where the vesicular or quasi-herpetic character is not developed, so as to set the diagnosis at rest, it is *always* necessary to use the microscope.

A more constant use of the microscope, indeed, in the diagnosis of cutaneous diseases, would land the practitioner clear of many errors, especially in reference to the discrimination of the exact nature and cause of eruptions that are mainly characterized, so far as naked-eye appearances are concerned, by "furfuraceous" desquamation. It affords information as to whether, for instance, scales or apparent crusts are composed merely of epithelial, fatty, blastematous, or fungoid elements, or an intermingling of these morbid products in various proportions. The appearances presented in certain cases of psoriasis, in which epithelial elements alone are found: chronic eczema; or tinea circinata in which inflammatory products are present in contrast with what is detected in cases of psoriasis; or seborrhœa, in which perhaps only fatty matter is seen, or at least greatly preponderates: are often such as to lead to the individual recognition of these diseases. When the fungus elements are detected—and they will be readily discovered oftentimes only in thin layers of material and closely incorporated with the epithelial elements—then the diagnosis of parasitic disease is certain.

Treatment.—The cure of tinea circinata is usually a very easy matter indeed, especially if it come under the notice of the practitioner at an early date. The fungus is usually to be found attached to and amongst the scales of the epidermis, and is readily reached by parasiticides. But in some cases the fungus elements find their way to the hair follicles, and then there is more difficulty in getting rid of the disease. Ordinarily the patches may be gently painted over with acetic acid once or more, and they will disappear. To make the destruction of the parasite certain, the patient may be directed to rub in a weak white precipitate ointment or nitrate of mercury ointment (ʒjss to ℥j) night and morning for a day or two. Solution of nitrate of silver in spirits of nitric ether: strong borax solution: ink even; hyposulphite of soda lotion, ʒiv to ℥vj of water; sulphurous acid lotion, one part to four of water; or bichloride of mercury ointment (gr. ij to ʒj of adeps), are all good and efficacious. When the eruption occurs in schools it is of much importance to put a stop to the disease quickly and speedily, and under these circumstances the patches whenever detected may be touched with blistering fluid.

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* Veterinarian for May, 1872.

In some instances the disease crops up both pertinaciously and freely here and there over different parts of the surface, and no sooner does one patch fade or go but others appear. I have always noticed the existence in such cases of a condition of system certainly not that of good health. The attacked are perhaps pale, or debilitated, or there are faults as regards hygiene or diet. Such a condition is to be met by remedies specially adapted to the lymphatic temperament; and the dilute acids and bitters, or even arsenic, iron, quinine, and cod-liver oil, as the case may be, may be given. At the same time, beyond the use of the parasiticides to the affected places, sponging with hyposulphite lotion should be used to the parts of the skin around the diseased area. In eczema marginatum, a solution of bichloride of mercury (two grains of the latter to an ounce of fluid) is recommended by Dr. Anderson, and acts well. But I am in the habit of using a strong solution of hyposulphite of soda (ʒvj ad ℥vj of fluid), directing patients to use soap and water freely before applying this lotion, in order to get rid of the greasiness of the skin, which repels the watery solution. I direct that linen rags soaked in the lotion should be kept applied night and morning for at least an hour at a time, covered over with oil silk. In some severe cases I touch the places with acetic acid first of all.

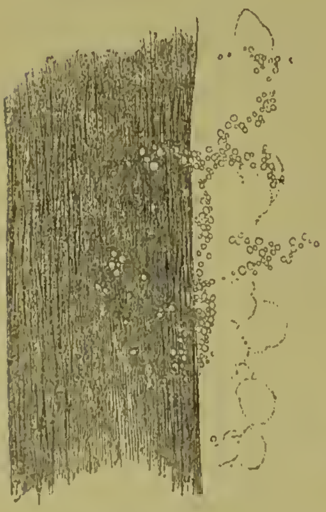
In those cases in which the disease is more or less general, and *tends* to assume the eczematous aspect, I believe sulphurous acid lotion to be the best remedy. But if there is any discharge, it is preferable to employ an ammonio-chloride of mercury ointment (gr. v to ʒj of adeps).

TINEA SYCOSIS.

Under the term Sycosis have been mixed up two totally distinct things. Sycosis, as I understand it, means inflammation of the hair follicles of the beard. This may be non-parasitic or parasitic as regards its cause. The parasitic variety is infinitely rare in England and Germany, but common in France. The non-parasitic is common. The term tinea, when prefixed to that of sycosis—viz., tinea sycosis—indicates the parasitic variety of sycosis. I shall describe that now, and non-parasitic sycosis in the section which treats of diseases of the hair follicles.

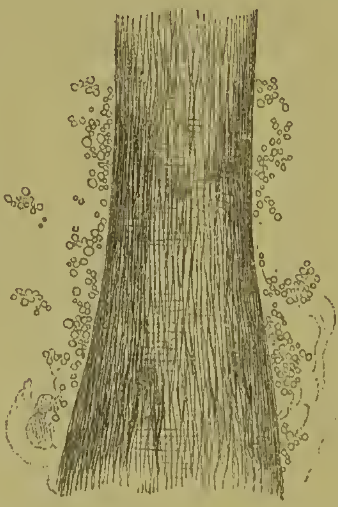
Tinea sycosis (mentagra, or sycosis menti, as it is called), as I have said, is a disease of adult life: and what is meant by this term is an inflammation of the hair follicles of the beard and whiskers, produced by the presence and growth of a parasite. Many (Wilson, Hebra, Simon, Wedl, and Hutchinson) deny its parasitic nature. However, Dr. McCall Anderson and I are quite agreed upon the point. We together saw the fungus in abundance in the diseased subject, under the microscope, at Charing Cross Hospital some two or three years since, where I had the pleasure of meeting Dr. Anderson. I held the parasitic nature in certain papers originally published in the *Lancet* in 1857, and I have seen no reason to alter my views. I entirely subscribe to the views propounded by Dr Anderson.* The truth is, that there is an impetiginous affection of the follicles of the beard that is likely to be, and is, mistaken for the parasitic disease; but the former has an acute onset, it quickly spreads, involves the deep part of the corium and oftentimes the cellular tissue, and lacks the damaged hairs characteristic of true parasitic sycosis. In typical cases of true sycosis, which however are rare, the disease commences quietly, and runs a chronic course. As a rule, the first thing noticed is a red itchy patch, which is really tinea circinata, and this may escape notice, as it is concealed by the hair. After a while, as the fungus gets into and down the follicles, the latter inflame and enlarge; subsequently induration takes place around the follicles, and shaving is painful; there is also a slight burning sensation present. There may be one spot only of disease existing for a long time. But in other cases, after a while, successive crops of pustules appear, often grouped together, and crusting to a limited degree occurs. Remissions are noticed in spring and summer. It is clear that the hair follicles are the seat of the disease, and the hairs themselves are altered, becoming dull, brittle, and loosened in the follicle, so that they are removed with ease. A fungus is to be found around and in the hair, but possibly not in all the inflamed follicles, because the original inflammation set up by the parasite in one may be propagated to another through continuity of tissue. It must also be remembered that pus is a parasiticide to a certain extent. Tinea circinata may sometimes co-exist in other parts of the body. The fungus of sycosis (see figs. 78 and 79) is called *Microsporon mentagrophytes*.

Fig. 78.



Fungus of sycosis (shaft).

Fig. 79.



Fungus of sycosis (towards root).

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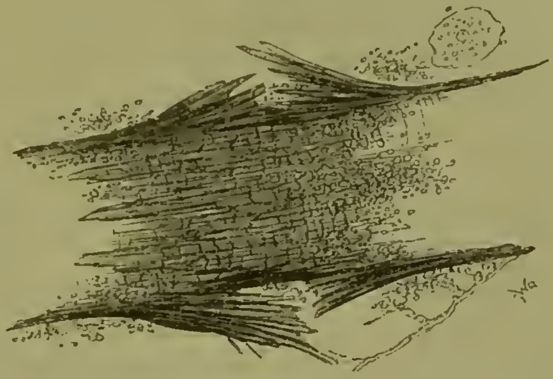
* Edinburgh Medical Journal for June, 1868.

The spores are ·003 to ·004 mm. round, and more or less nucleated; in fact, they are much the same as the trichophyton. The mycelial threads are said to be branched at an angle of 40° to 80°, and to be annulated. The fungus is said to have its peculiar seat outside and around the hair. This is not absolutely true.

I have now very frequently noticed, in certain cases, the hairs of the beard to be bent at one or more parts of their shaft, and at these bends what appear to be little white knots are seen. These knots, however, may be seated at any part of the shaft. When the hair is brushed it breaks off. This condition is seen in the beard and whiskers in adolescents and middle-aged men. On placing a "knot" under the microscope, it is seen at once that the fibres of the hair are separated, the fibres forming a little brush-like rim all round the shaft. On careful scrutiny, in some cases, fungus elements are seen upon and between the frayed-out fibres, and in minute form in the shaft itself. The hair can often be split up into two or three bands, after the addition of an alkali. Fig. 80 will readily explain this condition. I have also seen the free end of the hair present a brush-like appearance. Now I do not mean to assert that this condition is necessarily parasitic, because if the hairs are badly-nourished from any cause, the fibres will be ill-formed, and the hair will often break off and split up into fibres; but I am pretty certain that occasionally the cause of the disorganization is due to parasitic action—I hope I shall not be misunderstood in this matter—it is due to a fungus getting into the root and developing in the shaft after being carried some distance along it.

Fig. 80.



Diagnosis of Parasitic Sycosis.—It can only be confounded with non-parasitic sycosis and acne: the first is more extensive, often acute, has more crusting, the hairs in it are not loosened, but cause pain in extraction. In parasitic sycosis, the origin from an itchy, scaly spot, the induration of the separate spots, the absence of free crusting, the looseness of the hairs, and the presence of the fungus, as shown by the microscope, are distinctive. Acne of the beard resembles tinea sycosis. Other acne spots exist on the parts free from hairs or elsewhere, the hairs are not disorganized though they may be somewhat loosened, and there is an entire absence of parasite or its effects on the hair shaft. Syphilitic disease is known by its concomitants.

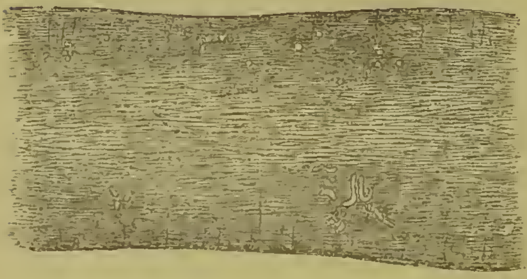
Treatment consists of epilation and the use of a parasiticide. The treatment, in fact, is the same as that described as applicable to tinea tonsurans. (See Formulæ, Parasitical Remedies.)

TINEA DECALVANS.

General Remarks.—At the present time there is a "dead set" made by almost every writer on diseases of the skin against the parasitic nature of tinea decalvans, and I believe I stand alone in my opinion of its parasitic nature. The chief ground upon which objectors claim its non-parasitic nature is that certain observers, especially the Germans, cannot detect the fungus. It might with as much reason be said that there is no parasitic sycosis on similar ground, or no prurigo, such as Hebra describes it, because it is not seen in England. But my complaint is that almost all writers have imagined that tinea decalvans and alopecia are one and the same thing. They may be quite different. Alopecia is the generic term for baldness; alopecia areata for localized baldness. Alopecia may result from tinea decalvans, it is true; but tinea decalvans appears to be a specific and distinct affair from mere baldness, which is only an effect of the tinea. To take, as some have done recently, the first case of *alopecia,* and to draw conclusions from a chance observation or two of that diseased, often secondary condition, as regards *tinea decalvans,* is wholly unfair. However, I will not pursue this line of criticism, but proceed to state what my experience is. I find that to enter fully into the controversy of the parasitic nature of tinea decalvans would occupy too much space, and I must therefore reserve the polemical part of the matter for a more convenient occasion.

Description.—This disease is characterized by the presence of circular, pale, bald patches, varying in size from one-third of an inch to one or two inches or more in diameter, which have been preceded by a certain amount of irritation. Patients say that they discovered a small bald spot, which has got steadily larger and larger. There may be several spots There may be slight scurfiness. The patches are well-defined. The disease attacks young people, and especially girls, as far as I have seen. The hairs around the bald patch are more or less dry, come out readily, and are seen to be bulbless, and tapering at their roots towards a point. But other broken-off short hairs stud the surface. Under the microscope, in some instances, at intervals on the shaft, are collections of minute spores, and also in the little masses of epithelium that stick to the hair. The hair may present bulgings here and there, which are due to the presence of abnormal granular matter, partly pigmentary, partly the minute stromal form of the

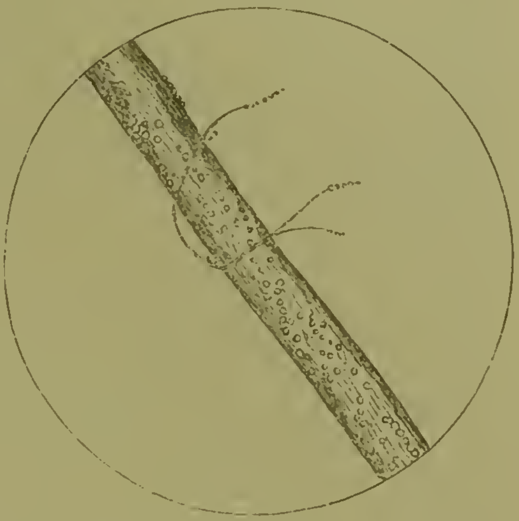
Fig. 81.



Minute fungus in tinea decalvans.

fungus, which is also scattered throughout the hair, and remains mostly undetected (see fig. 81). I have shown this repeatedly by artificial germination, by which I have obtained the distinct sporular form in the course of a few days from what appeared to be mere granular débris (see fig. 65). The fungus is the microsporon Audouini. The spores are from $\frac{1}{25000}$ to $\frac{1}{5000}$ of an inch, the filaments few, wavy, and devoid of granules. The ordinary appearance of the fungus is seen in fig. 82. The fungus is sometimes found in the epithelium at the extending edge of the disease. I believe, however, that it often lodges behind in the empty follicles, attacking the epithelial structures therein, and interfering with the proper re-formation of the hair.

Fig. 82.



Now I am quite ready to admit that this parasitic disease is not common—far from it, and that the majority of cases of circumscribed baldness observed in the head are not parasitic at all. But I cannot but state that I have found fungus elements without doubt, and so have others at University College. And I must here at once emphatically deny that what I have described as a fungus is nothing more or less, as suggested by my friend Dr. Duhring, of Philadelphia, than broken-up sebum. It is not upon the presence of the cellular form of fungus alone that I rely in diagnosing the parasitic nature of the disease, but also of distinct mycelium. Whether the fungus I have found is sufficient to produce the amount of hair-mischief present may well be open to question; and there are other considerations. I have seen a patch of tinea decalvans, on a head affected at the same time with tinea tonsurans. I have seen more than one and more than two members of the same family affected at the same time with tinea decalvans: and the disease has occurred as an epidemic. A remarkable case in point was afforded at Hanwell* a few years since, where the disease spread from one to between thirty and forty children in the same part of the building; the ordinary fungus was detected in these cases, which are alone explained by the contagious nature of the disease. This outbreak was investigated by the late Dr. Hillier, my predecessor at University College. It has been suggested that he erred as regards the diagnosis. I can understand an error as regards a solitary case, but I cannot believe that Dr. Hillier could perpetuate the error through some forty instances.

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* See British Medical Journal, February 29, 1868.

The whole matter is one not for decision at present but for investigation, and especially in reference to the asserted existence of transitions between the disease and tinea tonsurans—and their co-existence in the same subject.

I have said that localized baldness may be produced by other than parasitic causes, and the confusion of the parasitic and non-parasitic forms has led to great difference of opinion, which still exists. In any atrophy of the skin, the tapering hairs (atrophied roots) may be found. I believe also that bald patches may be the result of a failure locally in the nerve-activity or an atrophy *pur et simple ;* and, indeed, the hair of the scalp, eyebrows, pubes, and whiskers may disappear; but in these instances there is always thinning of the entire derma; the hair follicles are invisible, participating, themselves, in the general atrophy; the sensibility is diminished, so that the application of strong vesicating fluids scarcely irritates the scalp, if it does so at all. There is a general thinning of the hair during the progress of the baldness, and often antecedent neuralgia or some definite impairments of nutritive power traceable to an efficient cause, and no parasite to be found. On the other hand, in the parasitic alopecia, as I have observed it, the hair follicles are visible, there is not any diminution of sensibility more than is due to the inactivity of the follicles, and there is often antecedent erythema, with concomitant scaliness over the bald patch, whilst the loss of hair is in strong contrast to a vigorous growth—often of dark black hair around—on a head with a good crop of hair. But, as I have said, I am open to conviction, and hope to be able to specially investigate the matter.

Diagnosis.—This has been sufficiently indicated already in the above remarks.

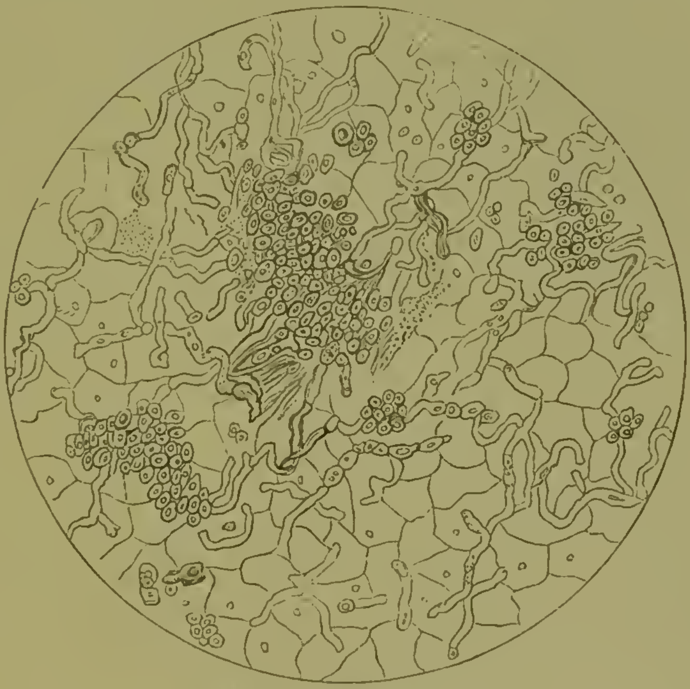
Treatment.—A host of panaceas have been suggested, but I cannot mention these here. My plan is to blister all patches that are rapidly on the increase with blistering fluid, to pull out a few of the hairs around the patch, if they are at all loose, then to rub in for ten days or a fortnight bichloride of mercury ointment (gr. ij to ℥j), and finally, to stimulate with nux vomica, cantharides ointment or lotion; and by perseverance I scarcely ever fail in speedily restoring the hair to the part. I give iron, cod-liver oil, bitters, or other drug, as the special nature of each case may require.

TINEA VERSICOLOR.

Tinea Versicolor, formerly called *Chloasma* or *Pityriasis versicolor,* often commences as little erythematous points, attended by itching, which is increased by warmth of all kinds. This stage, however, is rarely observed.

Typical Cases.—The patient presents him or herself with patches of a fawn colour, which are slightly elevated, dry, rough to the touch, somewhat scaly at the edge, and from which branny scales can be rubbed off. These patches are itchy, especially when the body is warmed. They are chiefly met with on the parts covered by flannel, and, it is affirmed, in phthisical patients, but certainly those who perspire freely. The disease may be made up of one or two small patches, or the front and back of the chest may be dotted over with small isolated patches, or small patches varying in size from a threepenny piece, intermingled with larger ones the size of the palm of the hand; or the patches may run together, and the whole of a large area may be uniformly affected—ex., the front of the chest, or the back, or the sides of the chest, or the whole front of the arm. Chloasma is especially common on the front part of the chest and belly. If the scales be examined, their under surface will be noticed to be studded with little collections of spores arranged in heaps, and mycelial threads freely interlacing. The minute hairs of the part are more or less infiltrated and the fibres split up. The disease has been noticed by myself to be produced by the implantation of the oidium, and by Mr. Hutchinson from the fungus of tinea tonsurans. The plant is the *Microsporon furfur* (Eichstädt)—see fig. 83, from a sketch of my own. The spores average in size between ·0008 and ·002 mm.; they are round, do not contain granules, are said to be "bilinear," and to be collected into little heaps, which are sub-epidermal. The myeclial threads are much branched and wavy. The resemblance between this fungus and that found in tinea circinata of the fork is at times complete.

Fig. 83.



Microsporon furfurans.

Unusual Forms.—In some cases tinea versicolor, instead of presenting the appearance of distinct fawn-coloured patches, has a reddened and punctated appearance. This is seen about the centre of the chest in front, and between the shoulders behind. The explanation of this condition is to be found in the fact of the disease being more or less limited to the hair follicles. The surface is closely dotted over with reddish points, each of which is surrounded by a certain amount of brown staining—that is to say, the disease extends a little way or is limited as it were to a small distance, around each hair follicle, the central red point indicating the opening of the follicle. If careful attention be directed to the point, small patches with much the ordinary characters of tinea versicolor may be detected here and there. These smaller spots may coalesce more or less, and form extensive patches in some cases. I have seen the disease in the form, in the early stage, of erythematous rings, with a slightly discoloured centre, and it is by no means unusual in hot weather to notice the edge of the patches become distinctly erythematous. The ordinary characters of tinea versicolor, however, are observed in the central part. I have also seen the disease in the form of small dirty light-brown spots, the size of from split peas to threepenny-pieces, dotting the entire surface of the body,* and the scales from which showed very luxuriant fungus under the microscope; and this leads me to make reference to the term *pityriasis nigra.*

Willan, it may be remembered, described a variety of pityriasis which occurred in young children who had been brought from India to England, and which was remarkable in the fact that there was a black discoloration in connexion with furfuraceous exfoliation. Cazenave mentions that many cases of this disease were seen in Paris in 1828-9. English writers do not seem to have met with such cases, but an instance, in an adult, of what had all the appearance of a *pityriasis nigra* came under my notice a year or two since. The man was forty-one years of age, and had had the disease for twenty-one years. He got it in the Mauritius. The whole of the back and lateral parts of the chest were covered by an almost sooty-black desquamating discoloration which in the centre of the chest, in front, was much lighter. The eruption was at once seen to be the ordinary tinea versicolor, complicated by marked pigmentary deposit, and it was proved to be such as suspected by the microscope. The subject was of the bilious temperament, and of Spanish origin. No one seems to have hitherto suspected for the patient the parasitic nature of the disease. The patient got well.

I have on one occasion seen tinea versicolor complicated by urticaria, the latter being well marked at the extending edge of a large patch of the tinea.

Lastly, I have observed tinea versicolor become very much inflamed and take on the aspect of an eczema. A very remarkable case of the kind came, amongst my out-patients, to University College Hospital, in the early part of the present year (1872). The man, who worked in a hot room, was the subject at first of tinea versicolor in well-marked patches over the chest and the arms. At his second visit most of the patches over the arms presented the appearance of an eczema of moderate severity, and the one state developed out of the other. The cure of the eczema was soon found in the destruction of the parasite of the tinea. And clinically and therapeutically it is of importance to know that an eczema may be excited by parasitic fungi and occur as a secondary consequence of their growth on the skin. If the eczema were not treated with parasiticides, it would last almost any time. I have already, in speaking of tinea circinata, mentioned that this disease may assume an eczematous phase.

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* Lancet, February 15, 1868.

Now these unusual forms—the punctated, the erythematous, the markedly discoloured, and the eczematous—are not common, but no one ought to be ignorant of their possible occurrence. In 99 cases out of 100 tinea versicolor has the readily recognisable characters I have described as belonging to the typical variety.

Diagnosis.—I am constantly in the habit of seeing patients with pityriasis versicolor who have been treated vigorously for secondary syphilis. Such a mistake ought not to occur. It is generally when the P. versicolor is extensive that error is made, but syphilis never produces an extensive fawn-coloured staining like P. versicolor, nor staining as the sole existing evidence of disease, and syphilitic stains are never elevated and desquamating. But I will give as follows the diagnostic points in the two cases:—*Syphilitic stains* are brownish; are attended by a history of syphilitic infection; are preceded by roseolous rash and slight pyrexia, with congestion of the fauces, &c.; are seated on all parts of the neck, breast, face, forehead, and arms; are without itching as a rule; have often a circular form, varying in size from that of a fourpenny to that of a two-shilling piece; are without desquamation; are not elevated; occur together with other forms of secondary disease often present; and there are no parasitic elements found in connexion with them. In P. versicolor the colour is fawn-coloured; there is no syphilitic history as the rule; no antecedent erythema as the rule, no roseola, no pyrexial symptoms, no throat congestion, &c. It occurs on parts covered by flannel, generally; is accompanied by troublesome itching, increased by warmth. The patches generally are of irregular shape, often of large size after the disease has existed for a while. Desquamation is usual; branny scales can always be scraped away from the patch, which is slightly elevated, whilst the eruption is uniform. No concomitants of syphilis are present, and parasitic elements are easily and always detected in the scales.

Chloasma of course may occur in men who have had syphilis, and with some frequency perhaps, but then the elevated fawn-coloured desquamatory aspect of the tinea ought to suffice for direct diagnostication. Melanoderma may resemble tinea versicolor, but there is no desquamation and no parasite, as there must be if the extensive staining were parasitic.

Treatment.—I have one mode, and it is always successful. I, first of all, have the part washed with yellow soap, then sponge with a little weak vinegar-and-water, and apply freely a lotion composed of four or six drachms of hyposulphite of soda and six ounces of water. A hyposulphite bath once or twice, if the cure be obstinate, will aid somewhat, but I never require much else than this for any case. The secret of the cure consists in getting off by the use of the watery lotion the greasy matter of the skin with soap, and in continuing the use of the parasiticide for some time after all appearance of the disease has vanished.

Tinea tarsi comes under the notice of the ophthalmic surgeon; but it may be as well to say that the inflammatory state of the Meibomian glands frequently seems to depend upon the presence of the trichophyton.

ONYCHOMYCOSIS, OR ONYCHIA PARASITICA.

These terms are used to designate disease of the nails due to the attack upon them of vegetable parasites.

The nails appear to be parasitically affected as a complication in several of the varieties of tinea already described—in tinea favosa, tinea tonsurans, tinea circinata, and tinea decalvans; but parasitic disease of the nails (onychomycosis) may exist as the sole disease present—that is, as an independent condition. I have seen all these conditions except onychomycosis in connexion with tinea decalvans. Speaking generally, the effect of the attack of the fungus upon the nail, is to thicken it, to render it brittle, to break it up into layers, and to make it opaque, or it may be yellowish. The seat of the fungus growth is shown in some cases in the early stage by yellowish specks imbedded in the nail, and the fungus oftentimes attacks in the first place the side or the part near the root of the nail, giving rise to a certain amount, it may be, of inflammation and discomfort.

In regard to favus attacking the nails, I may quote the description of Dr. Fagge* on a case of the kind. He exhibited a child eleven years of age, who had been suffering from favus of the head and limbs for a long time, and the nail of whose left little finger had become diseased within three weeks of the date of his exhibiting the case. The tubes and conidia of the fungus were seen to penetrate the substance of the nail, gradually invading it till they reached its root. The laminæ of the nail then became loose. The progress of the disease thus differed entirely from that usually described to be the common one, according to which a favus-cup forms beneath the nail and gradually perforates it. The part of the nail attacked was of a sulphur colour, and when the strata had been scraped off, the bed remained covered with an irregular striated mass of nail substance of a dark or yellowish hue. The fungus is the achorion.

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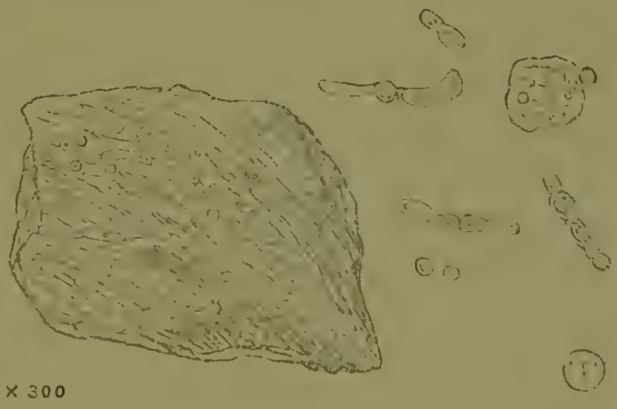
* Report of Clinical Society for March 13, 1868.

The disease (onychomycosis) is by no means a rare complication in tinea tonsurans. One or two illustrative cases will be found recorded by Dr. Purser* and Dr. Fagge.† Dr. Purser gives the following description:—Nail dirty brown, streaked with lines of a darker colour, greatly thickened, and at its free extremity separated from its bed by a mass of soft nail-substance which could easily be picked out. The entire nail was somewhat roof-shaped, a prominent ridge running along its centre; its surface was uneven and traversed by rough lines; longitudinal striæ well marked; the nail had a tendency to split up; and the microscopic appearances of a bit of the nail were as follows: it contained (1) spores like those of trichophyton; (2) filaments tortuous and branching, jointed and containing nuclei; (3) larger, less branched, brownish filaments, containing spores, walls of many indistinct, looking like moniliform chains; (4) granular matter. In a second case the appearance of puccinia was simulated. Dr. Purser correctly describes the fungus as trichophyton.

Dr. Purser's description is a very good one: the nail is rough and uneven, and in places has a worm-eaten appearance, or portions of its laminæ break off, and on examining scrapings under the microscope, the fungus elements are detected. I have usually found the conidia large, and mycelium made up of beaded rows of largish sized cells.

This condition of nail I have seen produced in those who have attended to children's heads affected with ringworm, in one or more nails, and as an independent state of disease or preceded by tinea circinata of the fingers or back of the hand, which has spread to the nail, and in that way infected it. The accompanying figure represents portions of the fungus elements found in the scrapings of the nail of a lady who had made the necessary applications to the heads of some children attacked by tinea tonsurans, and the practitioner will usually find the fungus in this form.

FIG. 84.



Onychomycosis may likewise occur without seeming to have originated as the complication of tinea circinata, or from tinea tonsurans, or favus; that is to say it may develop without there being any evidence of its having been caused by ringworm of the body or the head. Fagge* has described onychomycosis in connexion with tinea decalvans; but as before stated I have not seen this.

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* Dub. Quarterly Journal, Nov., 1865.

† Guy's Hospital Reports.

Diagnosis.—This is made by paying attention to the co-existence of parasitic disease, and by the microscopical examination. It must not be forgotten that the nails are rendered opaque, thick, and brittle in connexion with psoriasis, pityriasis rubra, lichen ruber, and the like; but in parasitic cases the evidence of the connexion between the nail and the general disease and the origination of the former from the latter is usually clear.

Treatment.—This is, in the majority of cases, very satisfactory, but in order that a successful result may be attained speedily, it is necessary that the parasiticide should be made to reach the deeper parts of the nail, and that the nail structure should be kept soaked in the parasiticide lotion. I usually scrape off some of the loose laminæ of the nails, then apply every second or third day some strong acetic acid to the seat of the change, the whole nail area if necessary, taking care not to make the matrix too tender: and then keep the nail or nails soaked in a solution of hyposulphite of soda (℥ss or ʒvj to ℥vj of water). Perseverance with the lotion will certainly cure the disease.

MADURA FOOT, OR FUNGUS FOOT OF INDIA.

Synonyms.—The other terms applied to the disease are Mycetoma, signifying the causation of the malady by a fungus; Ulcus grave; tubercular disease of the foot; Morbus tuberculosis pedis; and Podelkoma.

Description and General Remarks.—A good deal has been written and said about this disease, from time to time, by Eyre, of Madras, Ballingall, Bagunjee Rustomjee, Day, Vandyke Carter, Minas, W. J. Moore, of Rajpootana, and Dr. Bidie, and sufficient to make us well acquainted with its characters. Dr. Carter was the first to discover a fungus in the disease, and to suggest that as the cause, but it is difficult to gather from his writings in how many instances he has detected the fungus; and other Indian officers, save Dr. Bidie, do not appear to have met with it. I have had the opportunity, through the great courtesy and kindness of Dr. John Shortt, of Madras, of carefully examining several excellent specimens of the disease which he has sent home to me, and have in only one case detected the fungus, but it may have perished on the voyage in the others.

The disease when fully developed consists of marked swelling of the affected part—generally the foot, though it may be the hand, or even, it is said, the shoulder—which is studded over with little soft buttony elevations about the size of a pea, having a central aperture leading into a sinus. The buttony enlargements are studded over themselves with little black grains or masses like fish-roe (see fig. 87), which also collect about the openings of the sinuses. From the sinuses are discharged black-and-white particles, with thin sero-purulent fluid. The accompanying representation (fig. 85), after Mr. Minas,* gives some idea of the appearance presented by the foot attacked by the disease.

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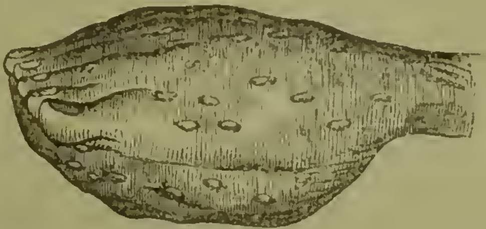
* Clin. Soc. Trans. vol. i. p. 77.

Fig. 85.



If a section of a diseased foot is made, there is found, as stated by Dr. Vandyke Carter :—" General confusion of parts, owing to absorption of the bones and fibrous thickening of the soft parts ; often the presence of granules, separate or aggregated in mulberry-like masses of a yellow or brown colour, lodged in spherical cavities excavated in the bone or in the soft parts, or in tunnels or channels leading from the cavities to the apertures on the surface, also lined by membrane. These granules are present in the discharge ; sometimes there is a deposit of fleshy (may be reddish or dark-coloured) substance, containing numerous minute particles (white or red), and occupying the same localities as the above-mentioned granular deposit. Lastly, in the same localities we find black granules, spheroidal tuberculated masses of the same colour, radiated in structure, which have been mistaken for melanosis or blood clots." These black masses are the fungus. Appended to the accompanying fig. 86 is Dr. Carter's description of the red fungus.

I can quite confirm Dr. Carter's description as applicable to certain cases, but I have very carefully examined other specimens in which there was one feature entirely wanting—viz., the presence of the black granules and masses in the spherical cavities, all else being the same, even to an abundance of roe-like particles. (See figs. 87, 88.) Such a specimen I presented to the Pathological Society of London on the 19th October, 1870, and it was referred for a detailed examination and report to Dr. Moxon, Mr. Hogg, and myself. We very carefully examined the foot, and made the following report :—

"The soft parts of the foot are swollen ; but the muscles are degraded and wasted, so that it is difficult to recognise them. The swelling arises partly from increase of the subcutaneous fat, and partly from the size and numbers of the canals. The several tissues are traversed in all directions by these canals, which branch and intercommunicate. The bones as well as the soft parts are pierced by them, but the tissue of the bone, even close to the walls of the channels, is quite healthy-looking. The walls of the channels are composed of a soft greyish filmy substance, continuous with and not separable from the tissues around. Microscopic examination does not reveal any structure in this substance, except a few fibrils and a defaced nucleus here and there. The contents of the channels are not connected with their walls. They correspond to the descriptions of fish-roe-like substance which is described as filling these canals in the second form of fungus foot, except that they do not show any pink colour. . . . . There was no trace of structure that could be set down as that of fungus. The cells and fibres that Dr. Carter has described in the black matter of his first form of fungus foot

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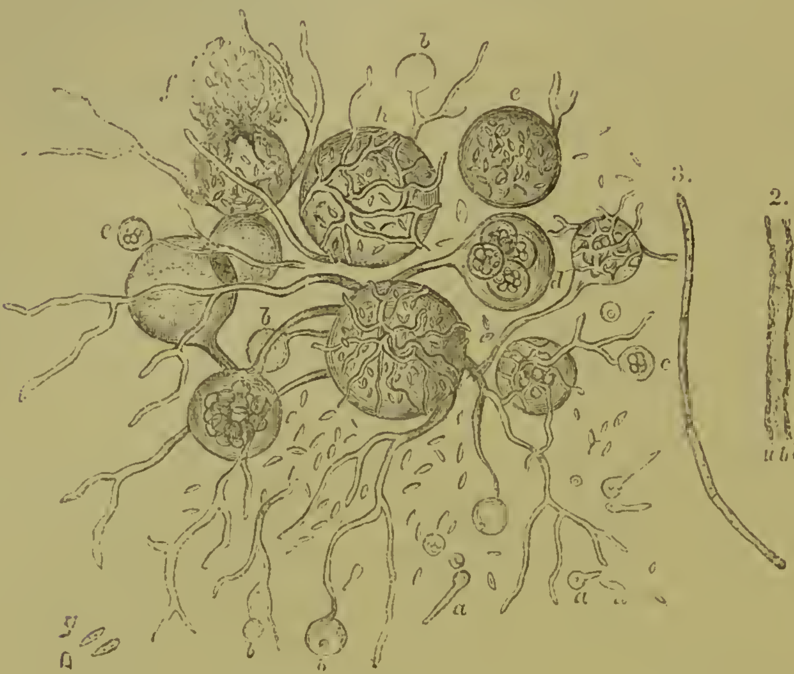
* Indian Med. Gazette, May 1, 1865.

Fig. 86.



Chionyphe Carteri.

(The original drawing of Carter reduced to one-quarter.)

1. *Red Fungus* which grew on the surface of the fluid covering the portions of a foot affected with the "Black Fungus," magnified to show its development from the germinating sporidia, *a*, *a*, *a*, to the formation and bursting of the spore *f*.

a, *a*, *a*, *a*. Germinating sporidia. *b*, *b*, *b*. Commencement of spore-cells containing nucleus. *c*. Nucleus and contents of spore-cell further advanced. *d*. Apparent quadruplication of contents of spore-cell with further subduplication of their interior. *e*. Spore and sporidia formed. *f*. Spore bursting. *g*. Sporidia more magnified to show shape and nucleus. *h*. Spore embraced by a condensation of small filaments, very common if not constant.

2. Felt-like form of the layer of Red Fungus as it grows in the bottle. *a*. Filamentous layer. *b*. Layer of spores. *c*. Filamentous layer below.

3. Filament to show that it is composed of cells with a nucleus in the upper end of each.

Filaments $\frac{1}{5400}$ in diameter; sporidium, $\frac{1}{5400}$ long.
Spore, largest piece, $\frac{13}{5400}$ in diameter.

we could not see any sign of. His opinion that the rounded bodies composing the fish-roe-like substance are made up of defaced fungus structure, coated with fringes of fat crystals, may be correct; but we must remark that if so, the defacement of the fungus character is curiously complete. On the other hand, these rounded masses (see fig. 87, after Carter, natural size, colour, and appearance; fig. 88, one of the masses magnified, ½-inch object glass), with their covering of sub-filamentous material, have a very uniform appearance, such as suggest to us a less accidental nature than that attributed to them by Dr. Carter. The substance of the little rounded masses is softly granular, and has in some instances a texture of fine fibrils in it, like those of coagulated fibrin. The surface of each mass is rounded and its curve is perfect, but we cannot see any nuclei or cells upon it. The sub-filamentous material presents at first sight the appearance of a ciliated epithelium, as its component matter gathers itself into masses about the size of the cells, and these masses will separate and float about, but in them, when separate, there is no nucleus to be seen, but only faint fibrillation; in some instances these filaments are separated from each other. They are not acted upon by acetic acid, caustic soda, or potash of moderate strength. The filaments bend in a wavy manner, and appear entirely devoid of rigidity such as characterizes crystals. (See fig. 88.)

"We are of opinion that the nature of these remarkable structures requires further investigation, directed rather to their stages of development or of further transformation than to their minute structure. We think that their very constant and peculiar form, and especially the sub-filamentous covering of them, marks them as something more definite than perished fungus."

Fig. 87.

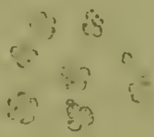
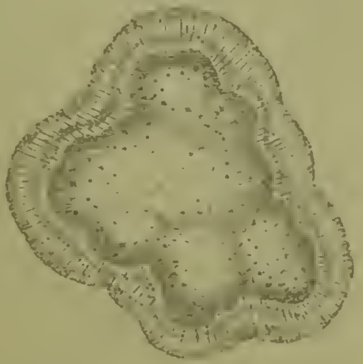


Fig. 88.



In a second specimen of the disease which I still more recently exhibited to the Pathological Society of London, the black masses referred to by Dr. Carter as lying in spherical cavities, were present in abundance in loculi in the foot, and these black masses were carefully examined by Dr. Bristowe and myself, and found to be made up of fungus elements, having the characters of oidium. Fig. 89 is Dr. Bristowe's representation of the fungus as he saw

Fig. 89.

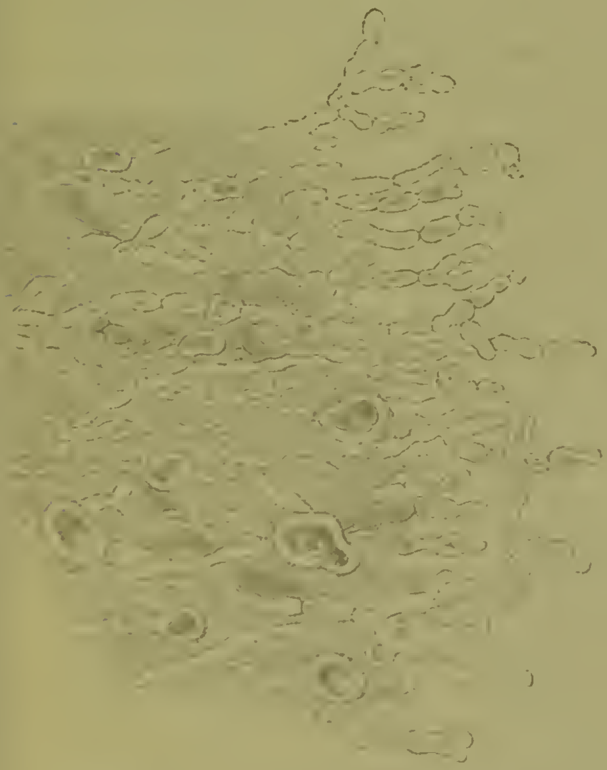
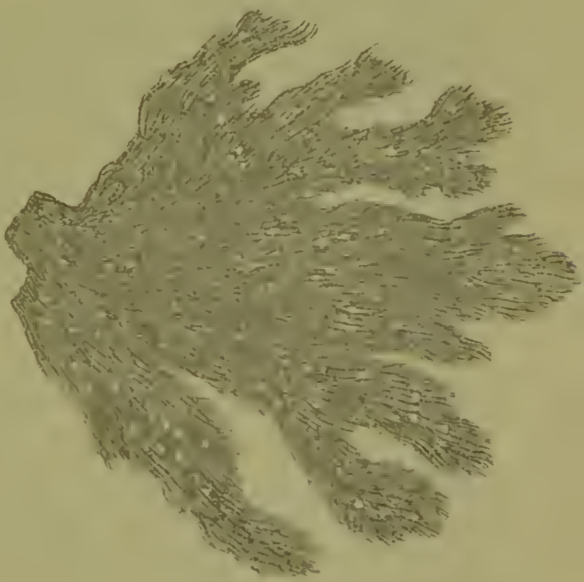


Fig. 90.



it after boiling in potash. Fig. 90 gives the appearance of a piece of the black masses magnified ten times. Fig. 89 is, in fact, one of the terminal points of fig. 90, magnified 420 times. There still remains, however, the fact that in one specimen where the foot was greatly disorganized there was no fungus at all to be found. So that, after all, it may be that there are two aspects of the disease—one in which fungus is a complication, and the other in which it is absent.

The most striking difference between the anatomical appearances in the two phases of fungus foot would appear to be the absence in one, of the loculi (above and beyond the channels) filled with a black truffle-like mass of fungus. The similarity as regards the perforation of the whole tissues by channels giving out the fish-roe-like masses is complete. The question suggested here is this. Is the presence of the fungus an accidental phenomenon; and does it find its way through the sinuses running from the surface: and there luxuriating, develop for itself by its growth loculi in the tissues? To determine this, it is necessary to learn the appearance of fungus foot in its earliest condition, and this has yet to be made out. There are one or two other points to be still further considered in regard to the appearances presented by the fully-developed disease.

Absence of Black Matter.—It does not follow that because we in England have found no black masses in certain cases, that they may not have existed to some extent in specimens prior to their being sent to this country; for, in the instance which Dr. Moxon and I myself examined, and in which no trace could be found, black matter was discharged from the sores in the foot before it was amputated, so we were informed, and when the amputation was performed, it was noticed that "the medullary part of the bones just above the ankle was infiltrated with a black fluid, the disease having extended up into the tibia." The nature of this black matter is uncertain. Is it fungus or blood? Some of it is certainly altered blood, and blood is sometimes discharged from the openings in the foot (?) And this leads to another very important point.

State of the Bones.—In some cases where the disease has appeared to be confined to the bones of the foot, and where no sign of disease has existed in the integuments of the leg, it has been noticed that when the leg has been amputated just below the knee, "the bones were unusually soft, and yielded readily to the saw," and it is in such cases that grumous black fluid is found infiltrating the medullary substance of the bone shaft upwards towards the soft part. In other cases this accompaniment of the disease has not been observed. We especially refer to Mr. Wright's observations in the Guntoor district. The condition of the bones themselves is sometimes simply that observed in an ordinary case of necrosis. There is a fine specimen in University College Museum of the entire bones of the foot illustrating this point. In other cases the bones in part are affected about the neighbourhood of the joints and in others, the bones are shelled out completely in parts, forming the walls of cavities enclosing black masses. Sinuses always lead down to the diseased bones.

Joints and Cartilages.—In those cases which we have seen, it has been observed in tracing the disease upwards from very diseased joints to joints commencing to be affected, that the articular surfaces about the ligaments were chiefly affected. Whether this is always so in the early stage remains to be proved.

Mode of Origin and Cause.—How does all the disease above described arise? This is a most important question indeed. We are told that Mr. Bagunjee Rustomjee (Dr. Carter's paper) found "in the early stage little or no swelling of the foot; the integuments are natural in colour, or slightly congested and hot, having in the surface elevations, which when burst or opened, allow a thin yellowish puriform discharge to exude, containing granules like poppy-seeds. The skin in the plantar surface is irregularly thickened and converted into knots at intervals, and gives, on handling, the feeling of lumps."

I have the history of four of Mr. Wright's cases. In one, "about ten years before, the patient noticed a small boil or pimple on the sole of the right foot near the toes: a few months after, others appeared, but no further change occurred for eight years, that is, two years ago," when the whole foot swelled and became painful, and discharged a blackish matter. In the second case, the man "noticed two years before a small pimple on the sole of the foot near the smaller toes, which came into an open sore. Other sores then appeared and the foot swelled generally with discharge of black matter." In case three, the man "noticed a small blister on the inner side of the left foot, when the ankle began to swell and sores broke out in different parts of the foot, discharging a glairy fluid and blood, but no black matter, it seems." In the fourth case, about eighteen months before admission, he "noticed a small sore between the big and second toe of the right foot; the toes then began to swell, fistulæ formed." Mr. Minas noticed in the case of the hand the first appearance to be a bluish discoloured swelling.

Now it will be observed here that there is no absolute proof that the surface disease is not an evidence of deeper-seated disease —I do not affirm it is; but what is wanted is a careful examination of a whole foot when the early stages above described are present, to ascertain what is the condition of the deeper parts; for it will be remembered, as stated just now, that very serious disease of bone may exist, to be discovered during amputation, for instance, when no evidence of its existence is afforded by the condition of the soft textures covering it. If the disease begins from without, and travels inwards, and is produced by an external cause, then in the earliest stages the deeper parts would be found healthy, and the superficial parts affected in the way above described, and it would be possible to be able to trace the progress of the disease in more advanced cases, from without inwards.

The real questions awaiting determination are the existence or not of deep disease first of all without fungus; or the origination of the disease in the superficial parts, and its travelling from without inwards or the reverse, in connexion or not with the presence of fungus elements; and these are problems now before Indian medical officers.*

The Treatment.—This consists in amputating the foot or other part affected if the disease be well marked, and in partial amputation and the free use of caustics if it be in an early stage.

MYRINGOMYCOSIS.

Another disease to note under this chapter is one caused by the growth of a fungus within the meatus of the ear. It has been re-described by Wreden lately, in the "Comptes Rendus," Aug. 26th, 1867, and named myringomycosis or mycomyringitis—outlandish terms both of them. The fungus is the aspergillus nigrescens and flavescens, having all the characters of a glaucus save in colour, or an ascophora elegans. In four out of ten cases, Wreden found the disease on both sides. There was much derangement of the function of hearing and a good deal of irritation. The fungus tends to form an interlaced mass of fibres or rather a white shining tissue, studded here and there with black points (aspergillus nigrescens), or brownish yellow (A. flavescens). The injection of a weak solution of hypochlorite of lime or arsenite of potash is recommended by Wreden. The same authority suggests that the source of these moulds may be the walls of uncleansed and stuffy rooms.

VAGINAL AND ANAL MYCOSIS.

In pruritic irritation of the vagina, oidial forms of fungus may be present as the cause. This has been called *vaginal mycosis.* A parasiticide at once stops and cures completely the pruritus, which otherwise might be troublesome. Anal irritation in children after thrush may arise from a similar cause.

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* For further discussion of this point, see Scheme for Obtaining a Better Knowledge of Endemic Skin Diseases of India, prepared by Dr. Tilbury Fox and Dr. Farquhar. India Office, 1872.

CHAPTER XXI.

DISORDERS OF THE GLANDS.

There are two sets of organs to deal with here—the sweat or sudoriparous, and the fat or sebaceous glands. I think both these parts of the skin are much more frequently disordered than is generally supposed. I shall speak first of—

I. DISEASES OF THE SWEAT GLANDS.

The deviations from health may be functional or structural; the former include all those cases in which the sweat varies in amount and kind, but in which there is no change in the actual tissue of the glands or follicles themselves; the latter those in which the sweat follicles are likewise congested, obliterated, inflamed, enlarged, or otherwise structurally altered.

The disorders may be arranged thus:—

A. Disorder of Function, including *hyperidrosis* (excessive sweating), *dysidrosis,* or excessive secretion with retention and its effects, *anidrosis* (diminished perspiration), *osmidrosis* (change in odour), and *chromidrosis* (change in colour).

B. Structural Disorder: *miliaria* and *sudamina* (congestive disorders), *lichen tropicus* (folliculitis), *strophulus* (inflammatory), *hydro-adenitis* (suppurative), and *cysts,* due to follicular obstruction. The above disorders may be more or less intermingled.

I wish particularly to call attention to a phase of hyperidrosis which might be termed *hyperidrosis with retention,* but which I have designated dysidrosis—an eruption usually regarded as an eczema of the hands. It bears the same relation to the sweat glands as acne does to the sebaceous glands, and has not yet been described as it should be. First, then—

A. FUNCTIONAL DISEASES OF THE SWEAT GLANDS.

Hyperidrosis.—Hyperidrosis is the term applied to *excessive sweating.* This hyperidrosis is, however, not very often an independent form of disease. It occurrs in connexion with general febrile disturbances, as in pneumonia, phthisis, rheumatism—appearing to be "critical" in some cases. It may, however, occur as a purely local disease, and then the excessive secretion of sweat takes place from the face, the hands, the feet, or the armpits, and it is very annoying. A similar state of things is natural to some persons. The sweat may be very offensive (see *osmidrosis*). Hyperidrosis may give rise to eczema and intertrigo, as about the feet frequently. In some cases, hyperidrosis, that is, a freer secretion of sweat than usual, may be conjoined with or followed by more or less congestion of the follicles, and then the morbid states known as *miliaria* and *lichen tropicus* result (see further on). If the sweat fails to escape it may collect under the cuticle, forming sweat vesicles. This is *sudamina*.

DYSIDROSIS.

This disease, which I now describe in detail for the first time, is characterized essentially by the retention in the follicles of the skin, of sweat rapidly and freely secreted. The follicles are much distended, and the retention of the sweat and the distension of the follicles are followed secondarily by congestion of the sweat follicles, by the formation of bullæ, maceration of the epidermis, and it may be, more or less dermatitis. This disease bears the same relation, in fact, to the sweat follicles as does acne to the sebaceous follicles. I shall not fail to explain the differences which it presents from sudamina and miliaria. The disease is of common occurrence, and it is regarded as an eczema. I don't know that I can bear stronger testimony to the correctness of my views as regards the separate and distinct character of the disease than by stating that those of the students of the hospital to which I am attached who have attended the skin clinique there for only a short time, are enabled to recognise the disease with readiness, and to give at once its distinctive features and its pathology.

Clinical Features.—This eruption varies much in intensity. In its slightest form it is confined to the hand, occurring in the interdigits, over the palm, and along the sides of the fingers, and on the palmar surfaces—some or all of these parts. The eruption makes its appearance in those who habitually perspire freely, and generally in the summer, but oftentimes in the winter; and the patients attacked complain of feeling weak and depressed. The eruption is made up, in the first instance, of minute vesicles deeply imbedded in the skin. The vesicles are at first isolated. They do not readily burst, and when they have existed for a few days the appearance of the affected part is just as though a number of small boiled sago-grains were imbedded in the skin. These sago-grain-looking points are caused by the distension of the sweat ducts by clear sweat, whose transparency contrasts with the aspect of the follicular wall and adjacent parts. These beaded or sago-grain-like imbedded vesicles are often well seen at the tips of the fingers on the palmar surface, but in severe cases, more or less all over the palm of the hand, and, in fact, the fingers. There is always much itching and a good deal of burning present with the eruption. As the disease progresses the vesicles get more distended and become raised. They are not pointed but ovalish; they eventually become faintly yellow in colour, and run together into the form of aggregated masses of small bullæ. Actual bullæ of greater or less size may form. The hand is then very stiff and painful. I have seen the back of the hand and the palm, with bullæ upon them an inch in height. If the vesicles be pricked, a fluid like clear serum oozes out (altered sweat), and it is at first alkaline and then acid. If the vesicles and bullæ be left undisturbed, the fluid is partly absorbed and, I imagine, partly evaporated away, the cuticle then peels off, leaving a *non-discharging, reddened exposed derma*. But the cuticle, especially about the roots of the fingers on the palmar aspect may become soddened, and like wet chamois leather. In some of the slighter cases the disease does not run on to the development of bullæ. In the severer and the slighter forms, one or both hands may be affected. When the eruption is disappearing altogether from the hand, the palm is left harsh and slightly scaly. It has been mistaken for syphilitic disease, but there is no deposit, and the palm is not thickened or tuberculated.

Now there are certain other phenomena, varying under different circumstances, observed in this disease.

First, as regards the Eruption.—The eruption about the hand or hands may be complicated by a rash, more or less general over the body. In some cases it may be limited to the back of the hand, and the fore-arms, or it may be in severe cases of the disease seen about the face, the neck, and on the trunk, the body, and the feet. This eruption is similar to that of lichen tropicus and miliaria; it is hyperæmia of the sweat follicles. It is very itchy. The same state of things as exists in the hands may be present in the feet, large bullæ forming, but the sago-like grains will be found at the extending edge of the disease. At times the vesicular eruption, when in its confluent form about the palm and fingers, presents, after it has existed a little while, a peculiarly yellow look, like slightly yellow wax or honey. There may be one or more outbursts of the eruption, and the disease lasts ten days or so in some cases, but in others for two or three weeks. In some cases, when the outpoured sweat goes, *a red, dry, slight scurfy, painful*—sometimes *awfully painful—surface is left behind, and becomes chronic*. Patients in whom this occurs are thin, pale, anxious looking, depressed, and so on. They require careful general treatment for the removal of the nervous debility that exists, when the hand or hands will get well. In these cases the sweat ducts are frequently seen dilated here and there over the affected surface, and never seem to recover their proper calibre.

Secondly, as regards General Symptoms.—I never knew any patient who had this disease I am now describing, well. In all the severer cases patients have been the subject of great nervous debility, and in some cases have been under the care of physicians for various anomalous nervous diseases—odd muscular affections. Some have been prostrated by mental anxiety or worry. They always "perspire too freely," are speedily exhausted, and are often dyspeptic.

The origin of the disease can be clearly made out as a distension of the sweat duct, and not only its superficial but also its deep part, and then this is followed by the continued distension of the duct, the aggregation and coalescence of the vesicles, and sometimes the results of the maceration of the parts attacked.

Its Alliances and Differences as regards other Diseases Like It.—This disease has, as before stated, been described as an eczema, but it lacks the catarrhal feature of eczema. It is not inflammatory; it is unaccompanied by sero-purulent discharge, by crusts, or the like. The vesicles are not produced by the uplifting of the cuticle by sero-purulent fluid, but by the distension of the sweat follicles by retained sweat. Nothing is more striking about the disease than the absence of anything like sero-purulent fluid in the disease, and crusts formed by drying up of inflammatory products. Eczema may, however, and does rarely follow the disease, I admit, but not frequently.

As regards sudamina, these occur in connexion with many febrile disturbances, and are not due to distended sweat follicles so much as to the uplifting of the horny layer of the cuticle by sweat. The opening of the duct lies at the base of the vesicle. (See p 91).

The red papules seen scattered over the surface at times, no doubt constitute miliaria, but this is only a complication—just what might be expected where the sweat function was disordered; and no doubt sudamina are sometimes present also.

From these remarks it may be gathered that the sweat gland as a whole is involved in the disease I have now described.

Cause.—This I do not pretend to define. I only know that this disease occurs under such circumstances that it may with probability be supposed that the innervation of the gland is specially at fault. It seems to me that there is a sudden influx of sweat, and the flow is so rapid that it cannot escape, the whole gland is distended, at least its duct, and the fluid presses in from below only to block up the upper portion of the duct by pressing together the twists of the duct in that part of the cutis where it runs in a spiral manner. If there is sudden pressure from below, the spiral twist of the duct must greatly favour the obliteration of the duct. In sudamina, I take it, the opening is plugged by exuvia, and the sweat finds its way laterally between the horny layers of the cuticle, the secretion of sweat is not so free nor continuous, because not due directly to special nerve paresis. The explanation of the causes of the disease I have been describing, and its differences from sudamina, is, I take it, to be discovered in some such direction as I now suggest.

Diagnosis.—It must be distinguished from hyperidrosis, eczema, syphilis, tinea circinata, and erythema papulatum. In hyperidrosis there is a large amount of sweat poured out upon the surface, it is not retained to distend the sweat follicles. I have already referred to the difference between this disease and eczema; nothing could be more different than the origin and course of eczema and dysidrosis. When the disease is disappearing, that is to say, when the sweat collected into the follicles and in the bullæ has dried away, and the cuticle is peeling off, sometimes a reddened dry, harsh, slightly scaly surface is left behind, and this looks like a tinea circinata, or a scaly syphiloderm; but the history of the case in dysidrosis at once clears up all doubt, for the patient explains that the particular stage and aspect now referred to was anteceded by the formation of vesicles and bullæ. In tinea circinata the fungus elements would be detected, the disease affects the back of the hands, and arises from small red, itchy, scurfy places primarily. In syphilitic disease, the derma being affected, the disease is deeper, therefore the surface is altogether more harsh and thicker; whilst dysidrosis, so far as the inflammatory state of the skin is concerned, is very superficial. Then in syphilodermata there are significant concomitants, and their origin cannot be traced back to an eruption of a vesicular character of acute nature. They are also tubercular in form.

Treatment.—This consists, in the severer form of the disease, in both general and local remedies. The patients who suffer from this disease, as I have stated before, are the subjects of anomalous nervous symptoms. They are thin, they fatigue easily, they assimilate badly, and they are often anæmic. Some require the removal of dyspepsia, some anæmia, some do best with the mineral acids and strychnine, so far as these are calculated to suit particular cases. But before attempting to improve the general health, it is desirable to begin in all cases with diuretics, and the kidneys should be made to act freely. This is not an empirical mode of procedure, because by it the skin is relieved of so much work. I give acetate of potash with ammonia and some juniper as the rule, together with some simple aperient. The patient should avoid fatigue and hot drinks, and should be quiet in the house till the worst of the disease is over. If the patient be rheumatic or gouty, and the urine very acid, I find it a good plan to give alkalies with a freer hand, and I prefer large doses of Vals water with the meals. If when the disease shows itself the patient be specially weak, and particularly if there be anything like neuralgic symptoms, it is well to combine the use of quinine in full doses, if it can be taken—gr. ij to gr. v for a dose—with the diuretic medicines. In certain females, with loaded systems and amenorrhœa, aloes may be given with advantage. When the disease subsides, anti-dyspeptics, followed by courses of arsenic and iron, with or without cod-liver oil, will generally improve the general health greatly. As regards local measures, there is much to be done to alleviate the pain and discomfort. The body generally may be covered with miliary eruption. The itching that accompanies this may be greatly relieved by bran and soda baths, or a lead bath, made by adding a pint of lead lotion to a bath. The surface may be sponged with a calamine (Formula 117), or weak lead-lotion. (See also Formulæ 88, 110, 135.) But the body may not be affected, for the hands alone are frequently attacked, but whether by themselves or in connexion with the body, they require careful management. The action of diuretics internally, and the exhibition of quinine, will serve to some, often to a marked extent, to check the rapid secretion of sweat; but if the disease be seen in the earliest stage, something may also be done in the same direction by binding up the fingers and hand in weak lead solution. Presently, however, the tense and painful hand will not bear this treatment. In that case, relief may be had by puncturing the sago-grain-like vesicles and the bullæ, when not a little fluid will escape. The hand should then be encased in oil, or the old ung. plumbi co. of the old London Pharmaeopœia (Kirkland's neutral cerate), and dressed twice a day. The disease must, as nurses say, "come to its height," and then subside, and it is at this very period that much good is to be done by keeping the parts encased in oil or emollient unguent, to prevent them getting harsh, and to enable the derma to recover its healthy state when the cuticle peels off and leaves it in a red and tender state. If a chronic red and scaly surface is left behind, it must be treated tenderly, and the medical man must trust to internal tonics to improve the general health, and so influence the local disease. But a borax lotion, and by-and-by a weak tarry ointment, may be used to stimulate the surface somewhat into healthy action. Some cases of the severer form are a long time getting well.

In the slighter cases, the internal use of quinine and emollient lotions and ointments soon remove the disease.

The main thing to do is to make a correct diagnosis, lest the disease be treated as eczema, or syphilis, or scabies.

Anidrosis.—This disease is characterized by a diminution of perspiration. A dry skin is part of many general diseases—ex., fevers, diabetes, and of certain skin affections—ex., xeroderma, in which there is a congenital defect of nutrition. More commonly, it arises from allowed inaction of the cutaneous covering; and the use of friction, warm bathing, alkaline baths, and the like, generally brings the skin into a proper state of action. There is of course in these cases more or less general debility, which should receive special attention in each instance.

Osmidrosis.—This is that disease in which the odour of the perspiration becomes so offensive as to constitute "the thing to be remedied."

Osmidrosis may co-exist with other functional derangements of the sweat apparatus. In general diseases the sweat exhibits very peculiar odours—in rheumatism it is "rank," in scurvy "putrid," in chronic peritonitis "musky," in itch "mouldy," in syphilis "sweet," in jaundice "musky," in scrofula like "stale beer," in intermittent fevers like "fresh-baked brown bread," in fevers "ammoniacal," and so on. When the feet are affected, the sweat is sometimes most offensive, especially in the summer time. Hebra describes this condition very fully. The hands and feet of the afflicted are cold without their knowing it; the feet exhibit shining drops of sweat; the epidermis is macerated, and presents a white wrinkled appearance; a certain amount of excoriation may result; and with these conditions an offensive odour exists. Hebra believes that the smell is not inherent to the sweat, but (external) in the boots and socks. This is, no doubt, true to some extent, but it would seem also that where the greatest cleanliness is observed, some people's feet are most unfortunately not of the sweetest smell. There is often a blueness due to inactive circulation in the tissues. The treatment is a matter sometimes of great tediousness. Much may be done by rigid cleanliness. If the disease be due to saturation of long-worn socks and boots, with acid sweat which decomposes in them, then the removal of the cause of offence is easy. In ordinary cases the feet should be well washed or bathed in a solution of alum or Condy's fluid. The use of a light sock and shoe, lotions of creasote, or finally strapping each foot for twelve hours together, as suggested by Hebra and Martin, with diachylon plaster, may be combined with tonics.

CHROMIDROSIS.—This term signifies coloured perspiration, a condition by no means common. The perspiration may be changed to a black, a blue, a red, or a green colour in certain cases. The black (*melanidrosis*) and the blue (*cyanidrosis*) varieties of perspiration are probably the same in nature, the substance giving the colour being identical, but varying in hue in the two cases. The literature of this subject is not a little extensive, and cases have been recorded specially by Billard,* Neligan,† Barensprung, Wilson, Le Roy de Méricourt,‡ Gintrac, Lecat, Gallot, Teevan, Bousquet, Banks, Lyons, Macken, Duchenne,§ (the first two regard it as a simulation), Gibert, Robin, Foote,‖ Kollman, Bleyfuss, and a very host of other writers.

It generally occurs in hypochondriacs, or in women with uterine disorders of different kinds. It is seen as a symmetrical affection attacking mostly the eyelids, and the lower one chiefly, but in other instances and more rarely the upper eyelid, the cheeks, the forehead, the sides of the nose, the breast, the stomach, and the hands. It consists of an oozing of black matter which can be wiped away, but only as a rule to quickly reappear. The discoloured secretion is excited by grief, by emotions, by fright, and the like, it is said.

The disease may be simulated. In a case referred to by

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* Archiv. Générales de Méd. See Cyanopathie Cutanée.

† Dub. Quarterly Journal, 1855.

‡ Mémoire sur la Chromidrose ou Chromocrinie Cutanée.

§ Gazette des Hôpitaux, 12 Mai, 1859.

‖ Dub. Quarterly Journal, May, 1866.

Duchenne, a woman avowed that she had painted her face during a period of twenty years to simulate the disease.

But there appears to be no doubt that there is a real chromidrosis. I cannot enter into detail here, but refer the reader to Le Roy de Méricourt's essay for much valuable information, and I content myself by saying that Dr. Foote,[*] in a good paper on the subject of chromidrosis has given the particulars of thirty-eight cases. He found that the disease was most common in women about the age of twenty-two, being twice as frequent in the unmarried as the married, and often preceded by uterine disturbance. The colouring matter is probably *indican*, which is, as it normally exists, colourless, and occurs pathologically in human urine. The indican is believed to be secreted by the sweat glands in a colourless state, and to be acted upon by the air so as to be oxidized blue, or brown, or blackish, as the case may be. In one case which Scherer examined, the patient had been taking a large quantity of iron, and Scherer found the blue colour to be due to protosulphate of iron.

HÆMATIDROSIS (BLOODY SWEATING) occurs under similar circumstances, and is supposed to be due to the escape into the sweat glands of blood from the capillaries, in its turn the result of great excitement; and, as Neumann observes, the disease is really an extravasation of blood into the sweat glands.

GREEN-COLOURED SWEATING.—The occasional occurrence of profuse sweating, the sweat having a green tint, due to the presence of copper, has been described by writers. Dr. Clapton[†] has recently put on record a certain number of

> "Cases of copper-poisoning occurring amongst the out patients of St. Thomas's Hospital." In these cases the copper has been taken into the system with the food, or by workpeople in the course of their accustomed occupation. One was a sailor, who "had been compelled, during the whole time of a long voyage, to drink lemon-juice, which was kept in a copper tank." Another was a young woman, an artificial-flower maker, who "was in the habit of inhaling the dust of verdigris and Scheele's green," which she used in her business. A third case, a coppersmith in an engineer's factory, led to the discovery that all the persons working in a particular shop, fifteen in number, were similarly affected. The general symptoms, induced by the copper, which were of a chronic character, were :—vertigo, gastrodynia, flatulence, dyspnœa, frequent vomiting, wasting of the body, coppery taste, lassitude, and indisposition to exertion; the tongue moist and flabby, and pulse hard and full. In all, there was a green stain of the edge of the gums extending halfway up the tooth. The perspiration of these people "had a bluish tinge. I examined the flannel waistcoats of several, and found them deeply stained, especially under the arms. One of the men stated that, even after a hot bath on Saturday night, his white shirt next day, if in hot weather, would be quickly discoloured. I noticed, too, that the wooden handles of all the hammers were stained green from the perspiration of the hands." "Even with the greatest care, it is impossible to prevent the inhalation of copper particles or fumes. The dust of the shop, when viewed in a bright ray of light, can be distinctly seen to be charged with bright metallic particles. Water, too, kept in any vessel in the room

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[*] Dub. Quarterly Journal, 1868.

[†] Med. Times and Gazette, vol. i., 1868, p. 658.

for a short time, can be shown by tests to be charged with copper. The fumes given off during the process of strongly heating the copper for the purpose of joining appear to be most injurious."

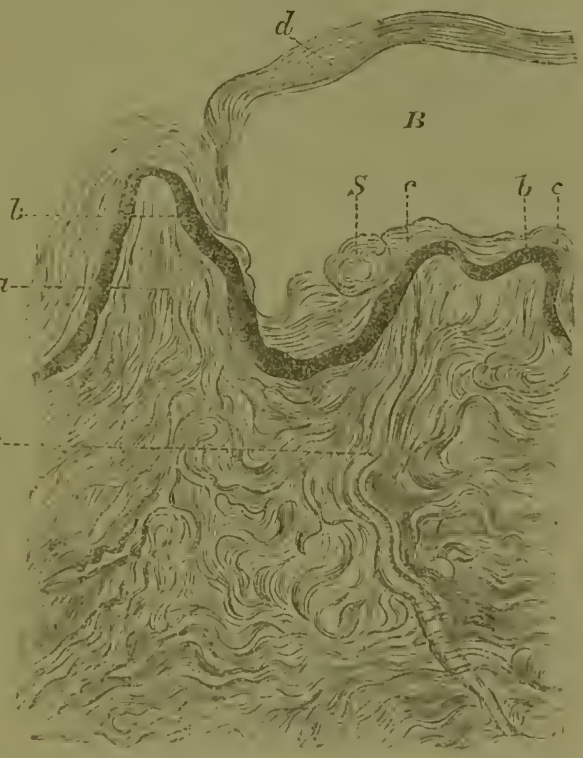
In all cases of chromidrosis it is the first duty of the physician to see that he is not being cajoled.

B. STRUCTURAL DISEASES OF THE SWEAT GLANDS.

Under this head I have included miliaria and sudamina (for in these the vascular plexuses of the follicles are specially involved); lichen tropicus and strophulus, and hydro-adenitis or suppurative inflammation of the follicles.

Miliaria and Sudamina.—These two affections really have no right to be considered as separate diseases. *Sudamina* is the lesser degree of miliaria, the contents of the vesicles being acid; miliaria is the more developed condition, in which inflammation has occurred and the contents are alkaline—in fact, inflamed sudamina. Sudamina have been described as little round vesicles, produced by distension of the cutis by sweat, and therefore seated at the orifices of the sweat follicles. The accompanying figure of Dr. Haight's gives the exact structure of the vesicles in sudamina. The gland duct, in fact, has nothing to do with its formation, for the fluid is found between the horny layers of the cuticle, and the opening of the duct is seen at the bottom of the vesicle. It appears to me that the opening of the duct gets plugged by collected epithelium in cases where the perspiratory function is in abeyance for a time, as in fevers: and when the skin begins again to perspire, the sweat cannot escape, but finds its way beneath the cuticle. The sweat gland itself is scarcely at fault. The vesicles of sudamina may be attended with more or less inflammation. Then the disease is termed *miliaria*. Sometimes the vesicles are reddish (miliaria rubra), sometimes white (miliaria alba). These vesicles are developed about the neck, axillæ, clavicles, and trunk, in diseases in which profuse sweating

Fig. 91.



a. Papilla. *b.* Stratum Malpighii covered by a layer of epidermic cells. *c.* Elevated layer of horny layer. *B.* Cavity of the vesicle. *D.* Canal of the sweat duct. *S.* Excretory duct of the sweat gland.

occurs; their contents quickly dry: each crop is usually succeeded in from three to six days by furfuraceous desquamation. The disease is seen in phthisis during summer-time, in acute febrile diseases, the parturient state, rheumatism, fevers, and the sweating disease of Picardy. Since the adoption of a cooler regimen in sick-rooms, the disease has been altogether less frequent than formerly. So-called miliary fever (said to occur in two forms), is characterized by profuse sweating and the development of sudamina. The treatment demanded is a cool regimen.

STROPHULUS.—I have already described this form of disease (see p. 153), and I there stated that it was, as depicted by writers in general, a mixed affair; one item of which is simply a congested condition of the perspiratory glands; in fact, a miliaria.

LICHEN TROPICUS, OR PRICKLY HEAT.—This has nothing to do with lichen. It is a congestive or inflammatory disorder of the sweat follicles of the skin. It might be called *hydro-adenitis tropica.* It occurs as the result of the stimulant action of heat upon the surface. It is therefore common in hot climates, but not rare in hot weather in England, as I can fully testify. "Prickly heat" is generally described as an eruption of numerous papillæ of vivid red colour, about the size of a pin's head, without redness of the skin generally, often interspersed with vesicles and accompanied by a peculiar tingling and pricking sensation, which may be almost intolerable, and is excited and intensified by heat, warm drinks, flannel, &c. The disease attacks chiefly the parts covered by the clothes, the arms, legs, breast, thighs, flanks, and the upper part of the forehead. As I have said, the anatomical seat of the disease is the perspiratory follicles. The great demand made upon the perspiratory glands deranges their circulation, so much so, that they are mostly unable to excrete sweat; the result is congestion, and then the surface is not properly cooled by evaporation, the sweat products are retained, and consequently the nervous plexus of the skin is acutely disordered: hence the burning, pricking sensation. Here and there over the surface a certain amount of perspiration is produced, this collects beneath the cutis, and forms vesicles. It is not uncommon to find lichenous papules intermingled with those of prickly heat, and even enlarged sebaceous follicles. These are accidental phenomena, the result of the disorder of the circulation through the skin.

The Treatment consists in the adoption of a cool regime, in avoiding the influence of all accelerants of the circulation, such as the drinking of hot liquids, or the eating of condiment, or the taking of stimulants; then in giving diuretics freely to relieve the congested skin, and in using locally bran baths, with slight astringent and cooling or anodyne lotions to the skin. But I much prefer diuretics followed by quinine in good doses, alkaline baths, and locally calamine lotion (see Formula 117).

HYDRO-ADENITIS.—Verneuil* described this disease hydro-adenitis. It is an inflammatory state of the perspiratory follicles, ending in suppuration. The disease may occur in every region of the body where there are glands, except in the sole of the foot; but it is most frequent in the axilla, at the margin of the anus, and near the nipple. It also is seen on the face. The disease commences by a crop of, or perhaps only one or two small inflammatory, tumours, always distinct, about the size of peas, of bright red hue, and (says M. Verneuil) at first like boils; but they are unlike boils in the fact that the little inflamed indurations begin not on the surface of the skin, in a sebaceous or hair follicle, but beneath the skin, which is reached and involved secondarily. The suppurating follicles offer no prominent "point" or "head," and there is no discharge till the swelling bursts, when the disease is brought to a sudden termination. The causes are said to be uncleanliness, friction, the contact of irritants, pus, parasites, profuse perspiration, and, according to Bazin, the arthritic dyscrasia, syphilis, and scrofula, but nothing is known about this. The disease is often mistaken for scrofuloderma. It is, however, very clear that there is a disease in which the actual coiled sweat gland becomes inflamed and often suppurates, and Verneuil is correct in describing it as commencing in deeply placed quasi-blind boils. The treatment consists in the use of alkalies internally, hot fomentations, and soothing applications—lead lotion and the like—externally. I find collodion the best thing.

I have had several cases of this disease under my care. The last was that of a young woman who had two or three red, subcutaneous "lumps" under her eye of bright red colour, and the size of peas, with no central suppuration. In a couple of weeks the tumours "broke," and the face rapidly got well.

CYSTIC FORMATIONS (OBSTRUCTED SWEAT GLANDS.)—In some cases one sees developed in the skin a cyst, which takes its origin in a dilated follicle or sac of the perspiratory gland. The follicle of the sweat gland becomes obstructed, and instead of the gland inflaming and suppurating, the fluid collects and distends the follicle. The line of demarcation between hydro-adenitis and cyst formation in the early stage is not well-defined. I have seen "serous" cysts of this kind form on the face from the closure of the perspiratory ducts occasioned by the cicatrices of acne in a strumous subject, and most difficult the disease was to cure. I find the continuous application of collodion the best treatment; the cysts, however, may be punctured, and the contents allowed to escape; the incisions must, however, be deep enough.

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* Journal of Medicine and Surgery, Oct. 1866.

II. DISEASES OF THE SEBIPAROUS OR SEBACEOUS GLANDS.

As in the case of the sweat glands, I may divide the diseases of the fat glands into two groups.

a. Functional—including *seborrhœa* (increased secretion), *asteatodes* (deficient secretion), and *allosteatodes*, or alteration in the character of the secretion. Retention of secretion is usually accompanied by alteration of structure, and I shall describe it under the latter head.

b. Structural—including diseases of the lining membrane of the sebaceous glands—ex., *pityriasis, xanthelasma:* retention of secretion and its consequence—as seen in *comedo, sebaceous cysts, molluscum contagiosum,* and lastly, congestive diseases and inflammatory diseases—*acne,* &c.

A. FUNCTIONAL DISORDERS.

Seborrhœa *or augmented secretion of fatty matter, sebaceous flux*—the stearrhœa of Wilson—is not so very uncommon in the various diseases of the surface, in which the skin is generally congested and the glands become sympathetically irritated or inflamed from their nearness to the seat of morbid action; in elephantiasis, and oftentimes in the early stage of syphilitic eruptions of the scalp, it is a marked feature. Some persons have naturally a greasy skin.

When seborrhœa occurs as a separate disease, its most usual seat is some part of the face, especially the nose, and it mostly shows itself in the form of little yellowish thin crusts, which on examination are found to be made up of sebaceous and epithelial matter, the epithelial cells of the sebum being loaded with fat intermingled with free granules and cholesterine; the skin beneath the fatty plates is reddened, more or less thickened, and the sebaceous glands are hypertrophied. The disease presents on the scalp the aspect of pityriasis; the scalp, however, is greasy and not dry. There may be itching—generally there is. The disease often disappears after a time. Its causes are not well made out; it is said to be produced by over-stimulating diet in lymphatic subjects; it occurs in either sex, generally about puberty. Now the fatty secretion may vary in consistence and quality in seborrhœa; it may be oily, and then represents the *acné sebacée fluente;* when it forms crusts, the *acné sebacée concrétée;* and, in a more hardened state, plugging the follicles, the *acné sebacée cornée* of the French writers. These terms sufficiently explain the different appearances of the disease. It is usual to describe certain local varieties as follows: Seborrhœa capillitii is one: this occurs in infants, and may excite eczema. In adults it forms one of the commonest varieties of scurf, and in old people it is seen in connexion with senile decay. It may also be a part of syphilis. S. facici, another variety, looks like eczema, but there is no discharge, only fatty sebum plates covering over a red surface. S. nasi and preputii have like characters. Lastly, there is a S. universalis Neumann describes, which is characterized by fatty plates caked on a thin, cachectic, and dirty skin (pityriasis tubercentium). I have seen acne of the body generally, complicate S. nasi and faciei. In speaking of ichthyosis it will be remembered that I stated that the scaliness or horny plates were often made up of a large amount of fatty matter. The disease—seborrhœa—occurs as a primary condition; in ichthyosis the fatty caking is but part of a general disorder of the skin. But a close resemblance to ichthyosis may be produced by seborrhœa; the naked-eye appearances of the skin may be the same, only that the disease is localized, the skin beneath the platy scales being naturally healthy.

Diagnosis.—The disease most likely to be confounded with seborrhœa is eczema, but the latter commences as an inflammatory disease: and in seborrhœa the inflammation or redness of the skin is a secondary occurrence. The scales in seborrhœa *are not composed of inflammatory matter.*

Treatment.—The simpler cases of seborrhœa, in infants particularly, are relieved at once by the free inunction of oil, by which the fatty plates are removed, and perhaps not to be re-formed. If, however, they show any tendency to re-form, a mild astringent ointment made of liquor plumbi, ʒj to ℥j of lard, or a few grains of carbonate of lead or oxide of zinc, used night and morning, suffice to prevent their re-formation. In the more marked instances of the disease, general in addition to local treatment is required, for there is usually some little debility present. I also am of opinion that wherever seborrhœa is well marked, save in syphilitic cases, cod-liver oil is a very admirable remedy, and specially aids the cure of the disease. Some persons are anæmic and require iron, and where nervous debility exists a course of arsenic and iron is specially needed with the oil.

Locally, the first point to attend to in these cases is to remove the scales, as in the slighter instances of the disease, by the free use of simple oil. When the scales have been removed, it is well to use some weak mercurial ointment except the surface beneath the scales be red and tender, in which case I much prefer some soothing application, such as a little liquor plumbi rubbed up with adeps. The mercurial ointments I refer to are, the nitrate of mercury diluted with six or seven times its bulk of lard or ointment made of about three grains of nitric oxide or ammonio-chloride of mercury to the ounce. A weak sulphur or a bismuth ointment or glyceral tannin are by no means ineffective applications. But in some cases the disease remains obstinate and then relief may be obtained by the soap treatment of Hebra.

Asteatodes.—This is *deficiency of the sebaceous secretion.* The skin appears to be dry and harsh, and this arises from deficient action of the sebaceous glands. Asteatodes is seen in hereditary syphilis, and in badly-nourished or uncleanly folk. The treatment consists especially in the use of the bath, oily infrictions, generous diet, and tonic remedies, especially cod-liver oil.

Allosteatodes.—*Alteration in the quality of secretion* is the characteristic of this form of disease. The secretion may be of various colours—yellow (seborrhœa flavescens), or black (so-called seborrhœa nigricans).

Seborrhœa flavescens is nothing more than a marked form of S. simplex; indeed is the same as the acné sebacée concrétée, only that the colour of the scaliness is yellowish. The sebaceous matter is thick, yellow, forming scales. The disease affects the nose, limbs, or trunk; there first exudes an oily transparent fluid, and this quickly concretes. The crust may become hard and adherent (A. S. cornée) and then the part feels and looks like a rasp on a small scale, the white epithelial plugs in each sebaceous gland standing out over the surface. I have seen this many times about the face, especially after that has been acted upon by the sun for some time. Sometimes the sebaceous matter poured out is black; this is the stearrhœa nigricans of Wilson. The colour is produced by the presence of pigment granules in the cells of the sebaceous matter. It is an analogous state to the *chromidrosis;* only in the latter case the pigment comes with perspiration, in stearrhœa nigricans with sebaceous matter. The treatment is the same as in the simple seborrhœa.

B. STRUCTURAL DISEASES.

Xanthelasma (Vitiligoidea).—Hypertrophy of the epithelial lining and adjacent structures of the follicle, with fatty infiltration, is sometimes observed, and has been called *Vitiligoidea**—a villanous term. The disease is as unlike vitiligo as I am. Mr. Wilson calls the disease *Xanthelasma,* because of the yellow laminæ which characterize it, and this is the best designation.

The disease may occur in two forms—" either as tubercles, varying from the size of a pin's head to that of a large pea, isolated or confluent; or secondly, as yellowish patches of irregular outline, slightly elevated, and with but little hardness." These are mere modifications of one disease, but are termed V. plana and V. tuberosa. They may occur together in the same person. The disease is seen about the face, the ear, and the limbs and palms of the hands. The most common form and seat is a yellowish patching about the inner part of the eye; the disease is symmetrical; the cuticle over the diseased part is unaffected. Rayer figures it at Pl. XXII., fig. 15, and says, " On the eyelids and in their vicinity we occasionally observe little yellowish spots or patches, very much like chamois leather in colour, soft to the touch, and slightly prominent, without heat or redness, and often very symmetrically disposed."

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* See also an article by Drs. Addison and Gull, who described and figured the disease in Guy's Hosp. Rep., 2nd series, vol. vii. p. 271; and vol. viii. p. 149.

In a case which I recently saw there were about the front of the entire arms and the whole outer surface of the lower limbs and the buttocks a multitude of tubercles the size of smallish peas; they were raised as much as a pea in height some of them, and were reddish in general hue, but studded over with yellowish points, and presented such an appearance as syphilitic tubercles studded over with large points of pus would give. About the elbows were largish plates of the ordinary xanthelasmic colour. I will refer directly to the contents of the tubercles. Mr. Hutchinson* from an analysis of thirty cases which he has collected concludes amongst other things that

> "Xanthelasma never occurs in children; but it is fairly common in middle and senile periods of life. That, in a small proportion of very severe cases, jaundice, with great enlargement of the liver, are met with. That, when jaundice occurs, it almost always precedes the xanthelasmic patches. That the form of jaundice is peculiar, the skin becoming of an olive-brown, or almost black tint, rather than yellow, and the colour being remarkable for its long persistence. That the enlargement of the liver may be very great, and that it may subside, and the patient regain good health. That in many cases in which there has been no jaundice, there is yet the history of frequent and severe attacks of functional disturbance of the liver. That xanthelasma occurs more frequently in females than in males, the proportion being two to one. That in all cases the xanthelasmic patches appear in the eyelids first; and that not in more than about eight per cent. do they ever extend to other parts. That the patches invariably begin near the *inner* canthus, and almost invariably on the *left* side. That xanthelasmic patches are of little value for purposes of prognosis, being usually the evidences of past rather than of coming disease. That it seems not improbable that they may result from any cause which has induced repeated changes in the nutrition, and especially in the pigmentation of the skin of the eyelids. Thus they occur to those who have been liable to have dark areolæ round the eyes, whether from "sick headaches," ovarian disturbance, nervous fatigue, pregnancy, or from any other cause. Hence their frequency in 'bilious subjects,' and in the female sex. That it is probable that of the causes mentioned under which the pigmentation of the eyelids may be disturbed, disorder of the liver is the most powerful; hence the fact that the more extensive cases are usually associated with hepatic disease."

Pathological Anatomy.—Most authorities regard the disease as an hypertrophy of the epithelium of the sebiparous glands; others look upon the disease as due to the deposit of a peculiarly light-coloured pigment.

In a case exhibited to the Pathological Society in June, 1866, by Dr. Pavy, a tubercle removed from the back of the little finger was submitted to microscopic examination. The deposit pervaded the true skin, and occurred in little nodular masses beneath. These were exceedingly tough, and consisted of fibrous tissue. On being squeezed between the forceps an opalescent juice exuded, which was found to contain a large number of fat-granules. The cuticle was not involved in the affection. It was argued that independently of the result of minute examination, against its being a sebaceous disease was the fact that it occurred, and in a marked manner, on the palmar aspect of the hands, where no sebaceous glands existed. In my case the same essential changes were found, and Dr. Fagge has given evidence to the same effect.

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* Paper read at the Med. Chirurgical Society, by Mr. Hutchinson. See Lancet, March 25, 1871, p. 409 *et seq.*

Cause.—The two last propositions in the series above quoted of Mr. Hutchinson's conclusions, give the key perhaps to the explanation of the main cause of the disease. Most authorities admit the existence of liver disorder prior to the onset of the disease. Dr. Frank Smith* probably expressed the views of most dermatologists who have studied the matter when he remarks that probably "some arrest of biliary excretion occurs; it is prolonged over months and years, and instead of the fugitive exanthem we have the tubercles and plates of vitiligoidea. The skin is not the only organ engaged in eliminating the *materies morbi*; the kidneys also separate it in large quantities."

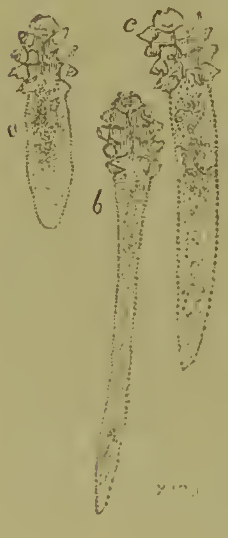
RETENTION OF SECRETION.

Now this condition of course is always accompanied by change in the calibre, and often the structure of the gland, and includes comedones, strophulus albidus, molluscum contagiosum, and sebaceous cysts.

The simplest form is seen in the *strophulus albidus* of children, which is nothing more nor less than the distension of little fat glands by fatty matter. As excessive warmth artificially induced in children stimulates the sweat-glands, and produces sudamina, so may the fat glands be excited; and if the secretion of sebum be excessive and does not escape, slight distension of the glands occurs.

COMEDONES.—*Comedones*, or grubs, constitute the ordinary black specks seen on the face of adults and adolescents, and they are produced simply by the retention of sebaceous matter. If slight inflammation be excited, then we have acne punctata. The skin in both is thickish, greasy; the secretion is retained and is inspissated; the dirt collects at the apex of each little grub, and forms a black speck or point: the whole face—for this is the common seat—may be affected. The sebaceous matter can be squeezed out of each follicle, and then resembles, according to popular notion, a little maggot; the mass is composed of sebaceous matter, epithelial cells, a number of minute hairs, and one or more of a species of acarus, called steatozoon (or acarus) folliculorum, see fig. 92, after Beale. The spores of a fungus, and even puccinia, have been found. Comedo is generally regarded as the least expressed form of acne.

Fig. 92.



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* Journal of Cutaneous Medicine, vol. iii., No. 2, Oct. 1869.

The Treatment consists in curing dyspepsial, amenorrhœal, leucorrhœal, and such-like conditions, which are often present, and tend to favour the occurrence of inflammation; exhibiting, in the lymphatic, iron in combination with saline aperients, and cod-liver oil. Locally, shampooing the face, or kneading it, as it may be termed—using very hot fomentation, followed by friction, and then certain stimulating and slightly astringent lotions. Borax is the best to begin with. Other remedies are bichloride of mercury, with almond emulsion, alkaline washes, oxide of zinc lotion, weak alum lotion; and, in the later stages, weak hypochlorite of sulphur ointment. (See Formulary.)

Sebaceous Cysts.—In some cases the opening of the follicle of the gland becomes obliterated, and a cyst forms, filled with sebaceous matter, and analogous to the cysts formed in connexion with the sweat glands. The simplest form is that of little white tumours of roundish shape and opaline aspect, varying in size from that of a pin's-head to that of a pea, solitary or multiple, and generally seated about the eyelids. They contain sebaceous matter. It is the acne miliaris of some authors: it differs from molluscum to all appearance only by the imperviousness of the duct. The treatment consists in turning out the contents and applying astringents or nitrate of silver. When the tumours are larger and encysted, they are called steatomata. Their most common seat is the scalp; they vary in size, and contain cheesy matter.

The best mode of treatment is excision.

Molluscum.—It has been usual to describe two forms of molluscum: but the one is an hypertrophic growth of the fibro-cellular tissue: the other a dilatation of the sebaceous gland, caused by excessive secretion of sebum and the cell contents of the sebaceous gland. This confusion of two different diseases is wholly unallowable. I have already described the former variety of disease under the head of hypertrophics, as *Fibroma*. Some authors style the disease fibroma molluscum, or molluscum fibrosum, but it is better to confine the use of the term molluscum to the disease about to be described, the more so as *fibroma* is a sufficiently expressive term for the disease described under that term; the glandular disease about to be described, and at one time confounded with fibroma, is *Molluscum contagiosum*. It commences as a little white elevation, like a minute drop of white wax; this enlarges until it attains generally the size of a split pea, but it may reach that of a nut. It is of circular form, firm, white, often flattened at the top, where a little depression, which marks the orifice of the follicle, is seen; and it is attached by a more or less sessile pedicle to the surface. The section shows it to be an enlargement and distension of the whole lobules of the sebaceous gland. The contents of the little molluscous tumours can be squeezed out through the orifice, and consist of soft and whitish sebaceous matter. If left alone, these tumours either disappear or ulcerate, or remain pretty much *in statu quo.* The chief seats of molluscum are the face, the chest, the arms, the genital parts, and the neck. The disease mostly occurs in children, but may be seen in adults. The disease is said to be contagious by some; this is denied by others. I have seen a mother and child, and a family of children affected in such a way as to be inexplicable save by the assumption of the contagiousness of the disease. I have no doubt of the contagious nature of the malady. But I would further observe that I have seen the disease spring up in families, especially in warm weather, in such a way as to give the idea of its being epidemic.

Pathology of Molluscum.—If we examine any of the tumours microscopically, we find that the whole sebaceous gland is involved and enlarged, the follicle being filled with secretion of a fatty character, and the only thing found in the mass are cells, which in most cases are similar to those of the epithelium lining, save that they are piled together one upon another, and are mingled with free nuclei. There are fibrous bands running between collections of these cells ; the cells are about from $\frac{1}{500}$

Fig. 93.

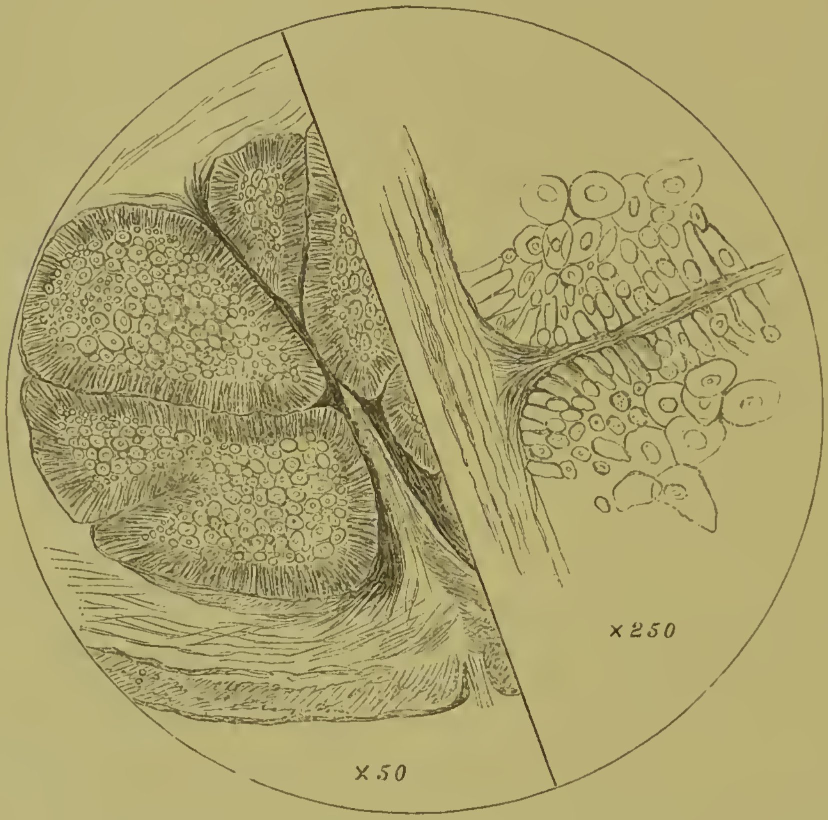

Fig. 1.—Shows the microscopical appearance of a section of a tumour of Molluscum contagiosum, as seen by a two-third objective, magnifying 50 diameters.

Fig. 2.—Shows another portion of the same tumour, as viewed with one-fifth objective, magnifying 250 diameters.

to $\frac{1}{1200}$ of an inch in diameter. They are supposed to be the contagious agents. I am indebted to Dr. Hilton Fagge for, amongst other acts of kindness, permission to quote the accompanying figures, which illustrate his paper on molluscum in the Guy's Hospital Reports.

The Diagnosis.—The disease is easily recognised. The small oval or round umbilicated semi-transparent tumour with a central opening, from whence sebaceous matter may be squeezed, is unmistakable. In old people little fibrous outgrowths are to be met with about the back and chest, but one may readily see that these do not arise from the sebaceous glands; they are really small fibromata or warts.

The Treatment of Molluscum is simple and effective. In those cases where it can be done the contents of the little tumours should be squeezed out, and nitrate of silver applied to the inside of the tumour. If the tumours are small, the acid nitrate of mercury, or potassa fusa solution may be used to them. When the tumours are large, their sacs must be removed: and when the tumours are numerous, each must be destroyed by caustic, and an astringent lotion used.

HORNS OR CORNUA.—When the secretion of the glands is abundant and pressed together, horns may be formed.

INFLAMMATORY AFFECTIONS.

It is generally considered that only one disease ranks here, and that is acne; but I have, it will be remembered, given reasons for supposing that furunculus, anthrax, and ecthyma have their anatomical seat in or about the sebaceous glands. Their description, however, will be found under the head of Pustular Diseases.

ACNE.

Acne consists of retention of secretion, together with secondary inflammation of the sebaceous follicles. At the outset of the disease there is simply a collection of sebaceous matter in the follicles of the sebaceous glands, and the disease may preserve this feature throughout; there is, in fact, no irritation consequent upon the plugging up of the glands. This condition of things, the least expressed form of acne, is identical with *comedo* before described, and it is styled *acne punctata*. The other varieties of acne usually made, are only exaggerations of acne punctata, in which inflammation of the follicles and parts around is set up. They are *acne vulgaris*, or simplex, and *acne indurata*. There is also a species of inflammation about the glands characterized by the formation of an excessive amount of connective tissue, which is styled *acne rosacea*.

Acne vulgaris, or simplex, is acne punctata, with slight perifollicular inflammation superadded. It is observed in the young of both sexes, especially about the time of puberty, on the face and back; it appears, first of all, as little hard lumps, rising up, so to speak, out of the skin. In severe cases the base is hard and the apex pustular. After awhile the pustule scabs over, and healing leaves behind a slight cicatrix.

Acne indurata is acne simplex of an indolent and more or less chronic kind; the separate pustules have a very hard dusky-red base; suppuration is scantily evolved; the pustules are painful, and there is a feeling of tenseness about the face: the derma generally is congested, thickened, and dense; but the disease is only an exaggeration of acne vulgaris.

Acne atrophica and *Acne hypertrophica.*—These terms have been applied—the former to acne spots which are succeeded by atrophy, the latter to acne succeeded by marked hypertrophic growth of the connective tissue. The hypertrophy in the latter variety is simply the consequence of long-continued congestion, occurring in connexion with acne. The tissues become hypertrophied, the glands enlarge, the skin is red or violet, rough, uneven, shining, and greasy, and little tumours form, which may be sessile or pedunculated. It is sometimes connected with intemperance, and should be regarded simply as a consequence of acne rosacea rather than an independent condition.

Syphilitic acne has been described (p. 289).

Morbid Anatomy of the above varieties.—The first stage in the morbid process by which an acne pustule is produced consists of engorgement of the vessels of the hair follicles and sebaceous glands. This is followed by the infiltration of inflammatory products about the sheaths of the hair and the connective tissue surrounding them, together with the formation of pus in these parts. This pus then makes its way to the surface, probably along the sheath of the hair, and collects under the upper layers of the epidermic cells. When the pus escapes the acne spot may gradually subside, or the hyperæmia continuing, the connective tissue hypertrophies, forming the hard base of acne indurata. In acne indurata, the hypertrophous growth of tissue is conjoined to perifollicular suppuration—the former being most marked, the latter not to any great extent as a rule. There are no hard and fast lines between the features of these several varieties. Upon the same face or back may very commonly be observed here comedones; there acne simplex (inflamed comedones); and there indurated pustules of acne (acne indurata).

Acne Rosacea.—There seems to be a great deal of discomfort produced in the minds of dermatologists in regard to the position usually assigned to this disease in the nosologies of different writers. But, after all, it is not of much consequence whether we class acne rosacea with acne or chronic inflammations of the skin. The disease is a composite affair. It is a chronic inflammation of the face made up of acne spots, periglandular inflammation, erythema and new growths of connective tissue growing independently of the glands. The first stage consists in congestion of the face, and more or less dilatation of certain capillaries. Certain points of the papillary layer become hyperæmic, and certain of the glands are similarly affected, so that acne spots are produced, an excessive amount of sebum is often secreted, and the skin feels greasy (seborrhœa). The general surface of the skin of the face is more or less congested. In the next stage, as the consequence of the continued inflammation, the connective tissue around and about the glands hypertrophies—that is to say, the acne spots become indurated and hard whilst the independent non-glandular papules become more marked. The colour of the redness is bright red, the vessels become varicose and ramble freely over the surface of the diseased parts; suppuration is not very marked, but the integument generally is thickened as a consequence of the general congestion. Now this disease is rarely seen in the young. It occurs in women of middle age who suffer from uterine troubles, and attacks the nose by preference. The disease is aggravated by trouble, by stimulating food, by exposure, by dyspepsia, and by alcoholic drinks.

Tar Acne I have already referred to, in speaking of medicinal rashes.

Etiology.—There ought to be little difficulty in arriving at a satisfactory conclusion as to the chief conditions which lead to the development of acne for the simple reason that the disease is so abundantly common, at least in England, as to furnish an exhaustless supply of material for observation on this point. The statement that acne is due to the accumulation of sebaceous secretion in the glands and perifollicular inflammation excited thereby is satisfactory as far as it goes, but the reader naturally desires to know what leads to the accumulation of sebum, and what are the influences that lead to the varying character and degree of the perifollicular inflammation. I will mention some of the causes. In the first place it must be remembered that the circulation of the face is sensitive to irritants; it is liable to great fluctuation; it is very active. These states are acted upon by external, and not only external, but various internal agencies; and nothing is more probable than that some derangement of the vascular supply will frequently take place. Then the glands are particularly well developed in the very situations in which acne is wont to occur—the face for instance—they are therefore likely to become functionally deranged. All debilitating causes, all local causes of irritation and disorders of those organs which have a reflex relation with the face, want of cleanliness, cold winds, the use of cosmetics, and many other things may induce glandular congestion, and so acne.

But in addition to this, acne occurs at a time when the hair follicles and their related sebaceous glands are physiologically active—that is to say, at puberty, when there is a great development of hair over the body, and naturally much activity of the sebaceous glands. Whenever a portion of the body is physiologically active it is likely to become disordered if the general or local condition of nutrition is deranged or defective. Physiological activity of the hair follicles implies activity of the blood-vessels and of nerve supply; and if there be local or general debility, what is termed "sluggish circulation," leading to congestion, may occur: and the action of external irritants, heat, cold, and the like, will operate more effectively as an excitant of congestion than under ordinary circumstances. Moreover, under the same circumstances, certain disordered conditions of internal organs, ex. stomach, more readily intensify the congestion by reflex action, and hence also it is that uterine and stomach and mental troubles aggravate acne. But there is something more than this to be said. In some persons the sebaceous glands seem naturally to be specially active. The skins of these persons are greasy, the secretion of sebum is freer than in others, and it may be different perhaps in physical characters, and when additionally excited the glands may readily be blocked with the sebum, and so produce comedo. Now it has always appeared to me that lymphatic and strumous subjects are prone to acne. At a time then when the glands are physiologically active, the gland function is apt to be disturbed; they become congested, and the congestion may be excited, or at least it is intensified, by local irritants, by reflected irritation from the stomach, or mental and uterine disease. In most cases the secretion of sebum blocks the gland duct, and the gland inflames as the result of the blocking up of its outlet, and perhaps the decomposition of the retained contents. These influences will of course only account for the plugging up of the glands, and a certain amount of congestion of them. The intensity of the inflammation, or at least of its effects as shown by the amount of pus production, and the degree and exact character of the subsequent hyperplasia, will depend upon the constitutional condition of the individual. In fairly vigorous subjects the acne will be slight, and if all goes well the inflammatory symptoms will subside without leaving any remnants of mischief behind. If the subjects in whom acne occurs are very dyspeptic, and if the dyspepsia, by its severity and long-continuance, (or if uterine mischief) cause much intensification of the hyperæmia, say of the face, and particularly if the patient be weak, the disease will be chronic, and the chronic inflammatory thickening about the glands marked (acne indurata). If the subject be strumous there will be probably much implication of the connective tissue about the glands, free pus production, and the disease will probably leave behind it much pitting (atrophy) after the removal of the large indolent, livid swelling that forms about the glands.

The above considerations bear directly upon the treatment of acne, and unless they are taken into account the practitioner will certainly not be so successful in, as he might be, his treatment of acne.

Treatment.—Acne is an inflammatory disease set up by irritation; and it must be cured by removing the cause of irritation, and by soothing the irritated part. I will set forth in order as shortly as I may be able the kind of treatments the different forms of acne require.

Looking upon acne as a whole, the object of the practitioner should be to prevent comedo or acne punctata from passing on to acne vulgaris, by getting rid of the obstruction in the glands, and checking the hyperæmic condition; in acne indurata to diminish hyperæmia and promote the absorption of inflammatory products; and in acne rosacea to check hyperæmia, and to destroy the new growth of connective tissue. Now it will be observed how much stress I lay upon checking hyperæmia, and this is to be effected not in one, but in various ways, since the causes of its existence are various. Hyperæmia may be controlled by internal remedies, by local remedies, or by removing conditions that by reflex action give rise to its continuance. But its disappearance may always be helped out by excluding the air from the face as much as possible. But I proceed to give further details.

The treatment of comedo or acne punctata has been dealt with. In acne vulgaris or simplex the practitioner generally has to deal with individuals who are debilitated, oftentimes with those who have neglected proper personal hygiene, or who have been working in ill-ventilated, stuffy, and heated workrooms; or who have lived on insufficient or too highly seasoned food: or those who whilst their excretory organs have been acting sluggishly have been taking a full diet; but, above all, with persons who suffer from atonic dyspepsia. In a word, with persons whose debility interferes with the proper performance of the gland function at a time when it is physiologically active, and whose dyspepsia causes congestion of the face, or the particular part of it physiologically active. I invariably under these circumstances begin by prescribing an alterative pill, and such a mixture as is given in No. 163 in the Formulary, a dose of which is to be taken an hour or so before each meal, the mixture being continued until the dyspepsial symptoms have disappeared, when I give a course of Vals water with the particular tonic suited to the condition of the individual I am treating. Oftentimes it is an arsenic pill (see Formula 182) or cod-liver oil or iron. Locally I interdict the use of all soap in the early stages, direct the face to be bathed with hot water night and morning, and the lotion (Formula No. 118) to be well shaken up, and applied with a sponge, and allowed to dry on, the superabundant powder being wiped or brushed off with a soft handkerchief. If the disease becomes indolent, stimulants may be used, none are better than a little weak sulphur ointment. Some prefer such remedies as are given in Formulæ 93, 95, 101, 102, 103, 105, 106, 125.

In acne indurata the same line of treatment is to be pursued at the outset, until the active congestion is passed. Where debility with constipation exists, and the face is very hyperæmic, No. 159 is a very excellent mixture for internal use. When the disease has become more or less indolent, it is then that stimulants and revulsives may be applied, and indeed the local is the more important treatment in such cases. Fomentation with very hot water night and morning is always advisable, and the indolent and indurated spots may be touched lightly with acid nitrate of mercury every few days to hasten their disappearance, whilst a weak ointment of iodide of sulphur or sulphate of zinc, or hyperchlorite of sulphur ointment, may be used in the interim. I do not advise, nor do I use, biniodide of mercury ointment, and the like powerful remedies advocated by some writers. In acne rosacea it is of the utmost importance to attend to the state of the uterine functions, and also that of the stomach. I invariably employ soothing remedies in the early stage, and wait until the hyperæmia has lessened in activity or amount until I adopt measures to destroy the newly formed connective tissue. Attention to diet and good hygiene are eminently essential in regard to acne rosacea. If there be varicose vessels, they may be cut across, as recommended by Westerton. The incisions should be never deeper than $2'''$; and the subsequent use of cold water will stay the bleeding, collodion being subsequently used to contract and heal the incisions. I have generally seen acids, and especially pepsin, given internally, do much good. Much has been said with regard to the efficacy of the iodo-chloride of mercury in acne rosacea. It should be used in the proportion of gr. v—xv to ℥j of lard; it requires care, as it produces a good deal of irritation. It is a preferable plan to touch the apices of the pustules with acid nitrate of mercury: this causes their absorption, often very rapidly. The tincture of horseradish is also said to act very efficiently, but I have no experience of its use. See also Formulæ 114, 115, 116, 151 to 172, 174.

The diet of all forms of acne should be unstimulating; and if the patient be dyspeptic, he or she should avoid sugar, pastry, seasoned dishes, and beer, spirits, and certainly sherry and port wine.

The after-treatment of acne consists in the exhibition of a general course of tonics, the mineral acids, or iron, or cod-liver oil, or arsenic, as seems best suited to the individual case in hand.

DISEASES OF THE NAILS.

The nails become diseased under a variety of conditions. The changes which they undergo may form part only, of a disease which affects the general system or the surface of the skin, or the disease of the nail may be the sole morbid state present in a patient. I will briefly refer to the several changes which the nails undergo under these different circumstances.

The nails become peculiarly rounded in aneurism, cyanosis, chronic inflammations of the chest, and phthisis. They are likewise disordered in pityriasis rubra (see p. 253), lichen ruber (see p. 144), psoriasis (see p. 259); and the changes they undergo in connexion with these diseases, I have already spoken of in treating of the latter.

In syphilis and leprosy the nails also become diseased (see p. 295, and p. 310), in connexion with the tinea again the nails suffer change from the attack of certain fungi upon them (see Onychomycosis, p. 466).

Onychia is the term applied to inflammation of the matrix of the nail. The inflammation is generally erysipelatous in character. It may be primary and idiopathic, or secondary, but also traumatic. The early symptoms are sense of heat, pain and throbbing with redness just round the base of the nail of erysipelatous aspect. These increase, the surface gets livid, the part beneath the nail inflamed, and assumes a cloudy and often a sanious appearance, in consequence of the effusion of blood; the nail loosens, becomes soddened, opaque, and thickened; and from beneath its surface oozes out a nasty dirty fluid. The nail often falls off by-and-by, leaving behind a very tender pultaceous-looking raw surface, which readily bleeds. Two courses may now be taken. The part may ulcerate, the finger inflame, the bone necrose more or less, and phlegmonous inflammation attack the arm: or an attempt at repair is made, after awhile a new nail is produced, which is short and generally stumpy. The treatment consists of local bloodletting, warm fomentations, removal of the nail and other dead structures; the use also of astringent lotions, good and generous diet and bark, with acid or ammonia internally. Syphilitic onychia has been noticed elsewhere (see p. 295).

In-growing of the toe-nail is easily cured by softening the nail, and then scraping off as much as possible, so as to thin it in the middle.

The practitioner will sometimes meet with a "corn" underneath the nail. It is a painful affection and may require the application of caustics.

CHAPTER XXII.

DISEASES OF THE HAIR AND HAIR FOLLICLE.

DISEASES OF THE HAIR.

DISEASES of the hair may be divided into those of Augmented and Diminished Formation, Abnormal Direction, and Alteration in Physical Aspect.

Augmented growth may be congenital and of varying extent, from small localized growths, such as little hairy moles, to the extensive tracts covering more or less of the body, as in the "hairy man" described by Mr. Crawfurd. Stimulation has a tendency to augment the growth of hair, if the formative power is normal. During convalescence a freakish, reactionary growth, in odd and unusual places, sometimes takes place.

Diminished formation of hair is partial or general, comparative (thinning) or absolute (alopecia). It may be congenital, accidental, or normal (senile). Diminished formation of hair may be represented in its different phases of occurrence as follows:—

1. *Congenital*—(*a*) partial, (*b*) general. This is a rare form of disease. Generally downy hairs stud the surface and prove the existence of bulbs, though in an inactive state.
2. *Accidental*—(*a*) partial, as in tinea decalvans and other parasitic diseases; in cases of wounds, direct injury, and the like; (*b*) general, arising from such causes as lower the vital tone—*e. g.*, fevers, syphilis, anæmia, gout, rheumatism, neuralgia, fast living, great study, violent emotions, dyspepsia, want of cleanliness, over-purgation, local eruptive diseases, wasting of subcutaneous fat, atrophic state of the peripheral nerves, morphœa (?), and lastly, physiological states—*e. g.*, hereditary peculiarity, pregnancy, seasonal shedding, deficiency of formative force inherent in the system, and failure of the mutual relations of parts.
3. *Normal*, as the shedding of the lanugo, and the loss of hair in old age (calvities).

Alopecia.—When the hair is lost entirely from a part, this is called alopecia, or baldness. Parasitic disease and atrophy of the bulbs are the most usual causes of *localized* baldness; syphilis, violent emotion, atrophy of the scalp (?), and senility, are most efficient in producing an absolute or a *great amount* of baldness. The other conditions noticed above usually give rise to thinning, not absolute loss or baldness. The total loss of hair is sometimes seen in early life. I have had young boys and girls under observation who have not a vestige of hair on the scalp. Now in some instances of complete loss, the baldness has commenced at one spot and travelled over the scalp. In other cases the disease commences as a general thinning; "handfuls" of hair have "*come out*," and suddenly the whole has been lost. Various theories have been suggested. Von Barensprung believes that the cause is a failure in the nerve-power. It is clear that the formative power suddenly fails, for in the early condition the follicles are distinct, and the skin is normal. It is true that it presently becomes thinned, hard, white, shining, insensible somewhat, and the follicles waste; but these changes are sometimes the necessary consequence of the inactivity of the hair-forming apparatus, and not the cause of the loss of hair. It appears to me that in some of these cases the hair dies from want of nutritive pabulum, as in syphilis; in others, in consequence of the cessation of the normal reproductive function of the formative apparatus. The hair comes to its natural period of existence, and no attempt is made to reform it.

Violent grief, great mental labour, and anxiety, are determining causes of this form of baldness.

Alopecia circumscripta.—The localized alopecia, alopecia areata, or circumscripta, is common. It is different from tinea decalvans, though the naked eye characters are the same. The hairs fall out from a certain spot, leaving that spot bare of its hairs, and the tissues of the part white, shining like alabaster. Many theories have been invented to explain this condition. The hairs which come out are found to be tapered and atrophied at their roots, and devoid of their root sheaths, and that is all that is certainly known about the matter at present.

Fragility of the hair, seen oftentimes about the beard, is explained by the attack of fungi, or by such causes as lead to insufficient nourishment of the hair, whereby its fibres are ill-formed, and tend to undergo degeneration. (See also p. 459.)

Senile baldness, or calvitics, is due to an atrophy of the structures generally; it commences on the crown of the head, the hair first turning grey; the scalp is dry, thinned, loses its subcutaneous fat, and the follicles become indistinct. In some people this change takes place at an early age; it is either an hereditary or physiological peculiarity.

General thinning of the hair, it is easy to understand, is most likely to occur under conditions which lower the vital energy of the patient. The scalp generally is scurfy and dry. This is in all probability due to the sluggish action which goes on. The usual sebaceous matter is not secreted; the follicles become choked by retained fatty and epithelial matter, and the formation of the hair is interfered with. This is also the case in eruptive disease and in syphilis.

The loss of hair in all these cases is an evidence of the working of some debilitating cause; it is not remediable to the most perfect extent without the use of general remedies—not by the employment of *local stimulation.*

The hair in cases of thinning and baldness is often dry, brittle (crisp), and twisted or split up. This results from the peculiar absence of moisture; in its turn from the diminished activity of the circulation of the scalp; in its turn again, from the general debility of the system.

The various other alterations in physical aspect come under the head of Parasitic Disease.

The Diagnosis.—Senile baldness commences with the hair becoming grey; it occurs of course in old people, at the vertex of the scalp first of all. The structures generally waste; there is little subcutaneous fat; the follicles are indistinct; the circulation is diminished, and the scalp is white, thin, and shining.

Alopecia from parasitic disease occurs in the young chiefly, and is preceded by signs of local irritation. It commences not at the vertex, but at the side of the head generally; the hair is not grey, the scalp is natural; it is not white, thin, and shining, but the follicles are distinctly visible and the circulation is always pretty active. In some cases there are peculiar features present, in consequence of the rapid and free growth of the fungus—*e. g.*, favus, tinea tonsurans. Parasitic disease and atrophy give rise to partial loss; debilitating causes to general thinning; syphilis sometimes to general loss, but mostly temporary thinning.

The Treatment.—In the cases of total loss, much good may oftentimes be done. In the first place, all syphilitic taints require detection and specific treatment; the hair will assuredly grow if a syphilitic taint be treated. Then debility of all kinds must be removed; and this is a matter of some considerable nicety, rules for which cannot be laid down. It is customary to give arsenic in these cases, and it is requisite that the student should know that one of its special actions is supposed to be the promotion of the re-growth of the hair. I prefer to treat the patients not by specifics but on general principles. With regard to the cases of general thinning dyspepsia has appeared to me to be a very frequent source of evil; it has assumed too a most determined and inveterate form, resisting acids, alkalies, bitters. Iron and tincture of nux vomica are useful tonics in the "nervous" cases. With regard to local measures: In the cases of absolute loss, which occur from trouble, or rather a failure of the reproductive function of hair-forming apparatus, local stimulation is the *sine quâ non* whenever any downy hairs are visible; if these be absent, the scalp atrophied from disease, and white and shining, little good will be done, though I have succeeded even here. Repeated blistering must be adopted, and stimulating washes used. If there be œdema, or any tension, though the follicles are distinct, tincture of iodine applied over diseased parts every two or three days is of service. Shaving the downy-haired scalp is also beneficial. Nine out of ten affirm that this does harm. I know to the contrary; it should be done once a fortnight regularly for a while. In the cases of general thinning, the plan of stimulation requires modification. The general state of nutrition is below par; and hence the local also. The scalp is not healthy; it is dry, scurfy, irritable. We should first of all try and get it into a soft and cleanly condition by frequent ablution, the use of glycerine and lime-water, or olive oil and lime-water, used night and morning. Then we may recommend local warm vapour douches, with gentle friction and galvanism. When the system is under the influence of tonics, we may employ local stimulation with the best results. Some teach that greasy applications should be avoided. As a rule, this is good advice. Certain ordinary pomades, cosmetics, and the like, on account of their very rancidity, do harm; the olive-oil and lime-water compound is not open to this objection. Tincture of nux vomica I have found the most efficient local remedy, in combination with distilled vinegar, and tincture of cantharides.

When thinning of the hair is the result of eruptive disease, it is due to debility, and must be treated upon ordinary principles.

DISEASES OF THE HAIR FOLLICLES.

Certain disorders connected with the hair follicle, or rather the structures contained within it or attached to it, have been considered in speaking of diseases of the hair, diseases of the sebaceous glands, certain inflammatory affections, and parasitic diseases. But I have as yet not spoken of one independent morbid state of the actual hair follicle itself—viz., sycosis, or inflammation of the hair follicle.

Sycosis.—As I have explained under the head of tinea sycosis, inflammation of the hair follicles of the beard may be produced by a parasitic or a non-parasitic cause. I have already described the parasitic variety under the term tinea sycosis (see p. 457). The disease, the features, course, and treatment of which I am about to detail, is a simple, non-parasitic parenchymatous inflammation of the hair follicles, and it is styled simply sycosis.

Sycosis is usually confined to the hair follicles of the beard and the whiskers, but it may occur in other hairy parts. It begins by the development of pimples, some raised, some not raised above the level of the skin, but which are all seen to be situated at the hair follicles, for a hair pierces the centre of each little lump. These pimples quickly pustulate, even from their earliest existence, and are accompanied by more or less inflammatory swelling of the perifollicular tissue; this swelling may be very marked and painful. This state of things may exist over a limited part of the face for some time, or it may gradually spread and involve both sides and the whole beard and whisker areas.

The appearances of sycosis differ much after what may be termed the acute stage is passed. The inflammation may subside and be limited to a few isolated and tuberculated pustules here and there. In other cases the skin of the beard and whiskers in different parts is reddened; it feels harsh and throws off a good deal of scurf; there being here and there a pustule or two. In some instances the disease quiesces for a time, or the parts attacked thicken very considerably and become indurated, so that the surface is generally raised, from the chronic inflammatory thickening and studded over with pustules and suppurating tubercles (inflamed follicles). If there be much pus formation distinct crusts may form over the surface. In some cases, especially those in which there is much induration, subsequent atrophy of the tissues occurs, and a thin scar-like surface, such as is left after a superficial lupus has disappeared, results; in fact, the disease, so far as its results in these cases is concerned, seems very like a lupus, only its history and concomitants show that it was originally a pustular disease of the hair follicles.

The state of the hairs is an important thing to notice in the early stages; the root is enlarged and surrounded by pus, and this condition, less marked, is found in chronic cases; but the hairs are not loosened as the rule, and not rendered brittle as in parasitic disease. The suppuration may loosen one here and there, but there is no fungus attacking them to alter them texturally.

I have repeatedly noticed a condition of the head in connexion with sycosis very much like that which exists about the beard, and in conjunction with disease of the beard. The upper lip may also be the seat of the disease.

Perhaps no cases are more troublesome than those of sycosis. My out-patients' room at University College Hospital is never free from them. The cases in which the freest suppuration occurs are, I think, generally developed in strumous subjects. The general health of sycotic patients I have not found to be good. They are pale, weak, and often overworked.

Nature of the Disease.—It is a simple inflammation of the follicles of the beard, with the ordinary results of long-continued congestion. But it seems that the result of the inflammatory infiltration may destroy the normal texture, and so lead to more or less atrophy.

Causes.—At present nothing is known of the cause of sycosis. Any local irritant, such as the continued play of heat upon the skin of the face, as in the case of those who work in hot rooms, or who shift during their work from hot to cold rooms, and *vice versâ*, will set up inflammation of the hair follicles in those who are out of health. Irritation by the razor in shaving will act similarly; but further than this I have nothing to remark, except that diathesis considerably influences the disease, for in syphilitic and strumous subjects the disease is abominably obstinate.

Diagnosis.—The disease may be mistaken for *lupus*—this I have already noticed. It may be confounded with *tinea sycosis*, but in that disease the hairs are texturally altered and loosened, and the parasite can be detected.

Treatment.—First as regards general remedies. In the acute stage gouty and dyspeptic tendencies must be recognised, and the patient treated accordingly, since gout and dyspepsia aggravate the disease. The diet should be most carefully regulated.

It is further important that aperients should if necessary be given, whilst stimulants, if they "heat" the system, be disallowed. Locally, the removal of crusts by oil, or poulticing the part once or twice, and applying a lead and opiate lotion allays the inflammation in the first instance. The time for active treatment is when the irritative stage of the disease has passed. Then tonics; iron, if anæmia be present: cod-liver oil and the like if the patient be strumous: or the mineral acids and bitters if he be atonically dyspeptic may be given, and some very weak mercurial ointment (citrine ointment, 1 part to 8 of lard) applied after hot fomentations night and morning. Epilation mostly fails to do good in my hands, and I now only employ it very rarely indeed. When there is much inflammatory thickening, however, there is one remedy that now I always give, and that is Donovan's solution. I have come to the conclusion that it is the only internal remedy of much use in sycosis; but it must be employed at the right time, and in conjunction with tonics appropriate to the general condition of the individual. The practitioner may combine with the internal exhibition of the Donovan, the local application of mercurial plaster: but I have found nothing so good locally as hot fomentations and weak citrine ointment.

FORMULÆ.

MINERAL WATERS IN SKIN DISEASES.

The dermatologist may very frequently considerably forward the cure of skin disease by the exhibition of certain mineral waters. But it is rather with a view to meet certain constitutional peculiarities and to influence the skin indirectly, than to directly remove cutaneous troubles, that such waters are to be employed.

Personally I only employ purgative, alkaline, and iron waters, and the water of the Woodhall Spa.

PURGATIVE WATERS.

The most convenient for general use, as well as the most efficacious amongst the purgative waters, are those of Pullna and Friedrichshall.

Pullna.—This contains sulphate of magnesia in good amount, besides sulphate of soda and chlorides of sodium and magnesium. The dose of this water is about a wineglassful mixed with an equal quantity of hot water : and this dose should be taken early in the morning before breakfast.

Use.—In the hyperæmic and inflammatory diseases of the skin where the system is loaded by retained excreta, the result of constipation or dyspepsia, or torpid liver action.

Friedrichshall.—This has much the same properties as the last mentioned water. It is, however, much less irritating than the Pullna. It may be given under the same circumstances as the latter, in doses of half a tumblerful, mixed with warm water one, two, or more times a day.

ALKALINE WATERS.

Vals.—I am in the habit of using the Vals waters almost exclusively when it is desirable to prescribe alkalies. These waters contain chiefly bicarbonate of soda. There are six springs—the Précieuse and Désirée, laxative ; the Magdeline, Rigolette and Dominique, tonic ; and the St. Jean, sedative. The Précieuse is the most useful according to my experience.

Use.—I use these waters in dyspeptic cases in which there is a very acid condition of urine ; or when I wish to give alkalies in connexion with tonics ; or as convenient diuretics. They are serviceable therefore in chronic eczema, psoriasis, acne, and the erythemata—in gouty, rheumatic, and dyspeptic subjects.

The Dose.—I usually prescribe three quarters or a full tumblerful twice a day, and the water may be taken with wine or spirit at meals ; or one dose may be taken at bedtime, and the other at the midday meal. If these waters act too freely on the kidneys, the quantity given must be diminished. The urine must always be watched for alkalinity.

St. Galmier.—This water contains the bicarbonates of soda and potash, magnesia and lime, sulphate of soda, &c , and much oxygen. It is good for dyspeptics.

Carlsbad (Sprudel).—This water contains sulphate and carbonate of soda, with chloride of sodium, &c. It may be given in doses of from two to four large tumblerfuls a day in connexion with cutaneous diseases, complicated by uterine disorder, as for instance *acne rosacea*.

FERRUGINOUS WATERS.

These waters are useful where persons are anæmic, and have a weak languid circulation, or in cases in which there is amenorrhœa. Some of them may be taken with meals.

Des Dames (Vichy).—This is a mild water containing iron, and is adapted to weak and nervous females. The water may be taken in doses of a tumblerful or so twice a day.

Spa.—This is a good water, especially if obtained from the Pouhon spring. The water contains bicarbonates of iron, lime, magnesia, soda, &c. It is therefore an alkaline ferruginous water, and may be given in connexion with skin eruptions complicated by anæmia and dyspepsia, but I have not much experience of its use. The dose is from one to four tumblerfuls a day.

Pyrmont.—This contains carbonates of iron, lime, magnesia, with a certain amount of sulphate of magnesia and chlorides of sodium and magnesium. It is useful under the same conditions as the last. The dose is eight or ten ounces, which may be taken with wine at meals two or three times a day.

Schwalbach (source Weinbrunnen) is also an excellent water, and may be used as the latter.

SPAS OF USE IN SKIN DISEASES.

A visit to foreign spas, which is usually made between May and October, in search of relief from cutaneous trouble is a common occurrence now-a-days. I doubt not, however, that the relief obtained is oftentimes not directly due to the baths taken and the water drank at these spas, but to the fairly quiet life led at most of the spas, the regularity of living. the change of scene, and the freedom from the "late hours," "the heavy dinners," and the like, which form so great an item in the life of a London season. Not that I am at all disposed to deny that much good may be done by a visit to foreign spas. On the contrary, I believe there is a time in most skin diseases—it is generally at the time the patient is getting towards convalescence—when a visit to a Continental or English Spa will do great things for him. It is chiefly with a view to get rid of gouty and dyspeptic tendencies that I advise patients to go to the various spas : or to renovate their constitutional vigour after a long course of mineral medicine : or for the relief of obstinate anæmia : or the removal of specific cachexia. The following is a list of the different spas to which patients may be sent. The diseases for which the waters of particular spas are appropriate are also stated.

A. Foreign :—

1. Ems Salzbrunn	For eczema and prurigo.
2. Wiesbaden Bourbonne les Bains	Ulcers and chronic skin diseases, with abdominal plethora.
3. Friedrichshall Pullna	Scrofulous skin diseases.
4. Rehme Nauheim	Eczema in the early stages, and pityriasis.
5. Kreuznach Krankenheil	Lupus, sycosis, lichen, ichthyosis, scrofulous ulcers.
6. Leuk (Louèche)	Eczema, psoriasis, and all chronic skin diseases.
7. Wildbad Gastein Pfæffers Teplitz	Prurigo, psoriasis, and lichen, where there is nervous debility.
8. Spa Schwalbach Pyrmont Franzensbad	Skin diseases connected with or owing to anæmia.
9. Aix-la-Chapelle Baden (near Vienna) Baden (in Switzerland) Aix-les-Bains Bagnères du Luchon Barèges St. Sauveur Eaux Bonnes Nenndorf Sandefjord (Norway)	All sulphurous waters, useful in acne, pityriasis, psoriasis, prurigo, sycosis.

B. English Waters :—

1. *Sulphurous.*—Harrogate, Moffat, Cheltenham (sulphur spring). The former is suited especially to eczematous disease in gouty and rheumatic subjects.
2. *Saline.*—Cheltenham, Buxton, Bath, Scarborough, Leamington (New and Old Bath).
3. *Chalybeate.*—Tunbridge, Cheltenham (chalybeate), Brighton. I think very highly of the iron water of Tunbridge Wells. I have seen this do much benefit to anæmic subjects suffering from chronic skin diseases.
4. *Bromo-iodine.*—Purton in North Wilts, temperature 58½° F., useful in strumous subjects; and the Woodhall Spa in Lincolnshire. The latter is situated midway between Boston and Lincoln. It is one of the very few spas in this country which contain in any medicinal quantity those potent and most beneficial agents, bromine and iodine. Amongst the Continental mineral waters, it most closely resembles that of the celebrated Kreuznach Spa, to which invalids of a certain class resort from nearly all parts of the world. It differs from and is superior to the waters of that spa in the very much larger quantities of bromine and iodine present in the former, and which are stated to be some three or four times as great.

The bromo-iodine water of the Woodhall Spa is a very powerful remedial agent, especially valuable in cases of scrofula, lupus, some cases of syphilis, and of psoriasis, especially in rheumatic subjects. The water of the spa at Woodhall contains a proportion of 5½ grains of iodine to 10 gallons; and 20½ grains of bromine in 10 quarts.

BATHS IN SKIN DISEASES.

The use of baths for the alleviation of pruritus in skin diseases, for removing scaliness, for promoting the absorption of inflammatory or specific products, and the destruction of parasites of different kinds is coming, I rejoice to say, into more common practice. My own opinion is, that skin diseases should be much more systematically treated by baths than they are. In describing the various diseases of the skin, I have indicated under what conditions the several kinds of baths should be used. I have now to give some further details as to the composition and exact mode of using these baths.

1. *Simple Vapour Baths.*

a. The Brick Vapour Bath.—Those who have not the appliances for giving a proper vapour bath will find Mr. Grantham's a simple mode of applying steam vapour to the body. His directions are as follows :—"Boil two gallons of water; at the same time put into the fire half a brick, which must be heated to redness; have a cane-bottomed chair and a hot bath to the feet, with a large blanket in the room; put the boiling water into an earthen pan, and place it under the chair: then put the red-hot brick into the pan. The patient is to be seated on the chair in a state of nudity, with the feet in the foot-bath, and then to be covered, excepting the head and face, by the blanket. By these means the steam is kept up on the surface of the body for the space of fifteen or twenty minutes; after which the patient is to be well dried and retire to a warm room, or be placed between the blankets."

b. A Modified Plan for giving a steam bath is the bath invented by Messrs. Benham and Froud, of Chandos Street, W.C., and called the Portable Oriental Vapour Bath. The price is about thirty shillings, and there is apparatus for all kinds of fumigation. If a sulphur bath is to be given, the quantity of sulphur should be half an ounce; mercurial remedies may be used also in it.

c. Different instrument makers keep a variety of simple baths for the administration of vapour baths. Hawksley, of Blenheim Street, supplies a capital bath for ordinary use at a few shillings cost.

2. *Simple Water Baths.*

Temperatures.—The following are the temperatures of ordinary baths :—

Bath.	*Water.*	*Vapour.*	*Air.*
The cold	40° to 65° F.		
The cool	65 to 75° F.		
The tepid.........	85° to 94° F.	90° to 100° F.	96° to 106° F.
Warm	94° to 98° F.	100° to 115° F.	106° to 120° F.
Hot	98° to 112 F.	115° to 140° F.	120° to 180° F.

The above are the temperatures which I use for the different baths. They differ in some slight particulars from those ordinarily given; for example, a tepid is considered to be from 85° to 92° F., I make the range from 85° to 94° F., for patients will not care to soak some time in a much lower temperature than 93° or 94° F.

3. *The Turkish Bath.*

In many cases of skin diseases the Turkish Bath does harm, for the reason that the blood is determined to the skin, in consequence of the stimulant action of the heat upon it. However, there are cases in which the skin, not being hyperæmic, is sluggish in action as regards the perspiratory function, in which the Turkish Bath is of service. The bath is never to be used with the idea of "sweating out" impurities through the skin. It gets rid of a certain amount of fluid, and so may relieve congestion of internal organs, but then this is not required in skin affections.

4. *Wet Packing or Compress.*

This may be employed with advantage in some cases of chronic skin diseases—mainly in psoriasis and chronic eczema—to remove scales from diseased surfaces. The patient may be wrapped up in a sheet wrung out in cold water, the whole being covered over with a blanket, and left for a quarter or half an hour or more according to circumstances, in those cases in which more or less of the body is affected by scaliness. When the wet-packing process is completed, the parts from whence the cuticle comes off must be dressed with some simple cerate or oil.

5. *Oil Packing.*

This may take the place of wet packing in all cases in which the skin is tender or much inflamed, and it is especially to be advocated for cases of pityriasis rubra or inflamed psoriasis, in which the surface is dry, tender, and more or less inclined to crack and excoriate.

6. *Medicinal Baths.*

Medicinal Vapour Baths.—It is needless that I should describe in detail the mode of administering medicinal vapour baths. The necessary apparatus can be obtained at any instrument maker's. The mineral is volatilized by means of the heat derived from a spirit lamp, which is made to play both upon the small tray in which the drug is placed, and upon a certain small layer of water, so that steam and medicinal vapour may be made to surround the patient's body at the same time. About a quarter of an hour or so should suffice for a medicinal vapour bath. If a mercurial bath is desired, from fifteen to thirty grains of calomel may be sublimed, and the patient on coming out of the bath should not be dried, but put on a clean night dress and go to a warmed bed. If a sulphur bath be given, from one to two ounces of sulphur may be used. At University College Hospital I have special apparatus for these baths.

Medicinal Liquid Baths.—These baths are of various kinds. The quantity of water in a bath is estimated at thirty gallons. The temperature of the water should be from 90° to 95° F., and the amounts of medical substance and the different kinds of the latter are indicated in the following table:—

7. *Emollient Baths*, made of—(*a*) Bran, 2 to 6 ℔s.; (*b*) Potato starch, 1 ℔.; (*c*) Gelatine, 1 to 3 ℔s.; (*d*) Linseed, 1 ℔.; (*e*) Marshmallow, 4 ℔s.; (*f*) Size, 2 to 4 ℔s.—to 20 or 30 gallons of water. Use in all *erythematous* and *itchy* and *scaly diseases.*

8. *Alkaline.*—(*a*) Bicarbonate of soda, ℥ij to ℥x; (*b*) Carbonate of potash, ℥ij to ℥vj; (*c*) Borax, ℥iij. The bicarbonate of soda I often use with bran liquor made by infusing a gallon of bran. Use in *eczema*, *psoriasis*, *urticaria*, *lichen*, and *prurigo*, where there is much local irritation.

9. *Acid.*—Nitric or muriatic acid, ℥j; or a mixture of nitric acid, ℥j; or more, with hydrochloric acid, in like quantity, to 30 gallons of water. Useful in *chronic lichen* and *prurigo.*

10. *Iodine.*—Iodine, ʒss, iodide of potassium, ℥ss, with ℥ij of glycerine; or iodine, ʒj or more, with ℥j or ℥ij of liquor potassæ, to 30 gallons of water. Use in *scrofulous eruptions*, in *syphilis*, and in *squamous diseases.*

11. *Bromine.*—20 drops of bromine, with ℥ij of iodide of potassium. Use as the iodine.

12. *Sulphuret of Potassium.*—ʒij to ʒiv to each bath. The balneum sulphuris co. of Startin is made with ℥ij of sulphur (precipitated), ʒj of hyposulphite of soda, and ℥ss of dilute sulphuric acid, with a pint of water, added to the usual 30 gallons of water. Use in *itch*, in *chronic eczema*, *lichen*, and *psoriasis.*

13. *Mercurial.*—Bichloride, ʒj—iij, with ʒj of hydrochloric acid. Biniodide of mercury, ʒj, with ℥ij of chloride of sodium. Use in *pityriasis rubra* and the *syphilodermata*, especially with ulceration. The Purton springs in North Wilts are bromo-iodated and sulphated waters, having a temperature of 58½° F., and would appear to be very useful in strumous subjects.

CAUSTICS.

14. *Iodine.*—Iodine, ʒss; iodide of potassium, ʒj; distilled water, ʒv. Use in *glandular enlargements, lupus.*

15. *Nitrate of Silver*, ℈ij; spirit of nitric ether, ℥j. (To be kept excluded from the light.) Use in the chronic forms of *erythema*, *eczema*, *psoriasis*, and *ringworms.*

16. *Chloride of Zinc.*—Chloride of zinc, ʒiv, chloride of antimony, ʒij, starch, ʒj, and glycerine, q. s. Use in *ulcerous* and *tuberculous* affections.—*Startin.*

17. *Arsenical.*—Calomel, ℥ijss; bisulphuret of mercury, ℈ij; and arsenious acid, ʒj.—Use in *lupus*, *scrofulous ulcers*, and *syphilis.*—*Startin.*

18. *Vienna Paste.*—Unslaked lime and caustic potash, of each equal parts; when used, mix with alcohol. Use as above.

19. *Bicyanide of Mercury.*—Gr. ij or more to ℥j of water. Use in *acne rosacea;* to be painted on for two or three minutes, and then wiped off.—*Burgess.*

20. *Biniodide of Mercury.*—Gr. x to gr. xx to ℥ss of glycerine. Use in *lupus* especially.

21. *Acid Nitrate of Mercury*, ʒij; tragacanth powder to make a mass. Use in *lupus*, *syphilitic tubercles*, *nævus*, &c.

22. *Chromic Acid*, gr. lx; water ʒiv. Use for the *destruction of warts.*

23. *Plencks.*—Alcohol and acetic acid, of each ℥ss; bichloride of mercury, alum, camphor, and carbonate of lead, of each ʒss. Use in *syphilitic warts;* pencil twice a day.

24. *Savin* (Langston Parker).—Powdered savin, bichloride and nitric oxide of mercury, equal parts. Use in *condyiomata* and *warts.*

25. *Coster's.*—Iodine, ʒj to ʒij; and colourless oil of tar, ℥j. Use *in ringworm in the early stages;* six applications suffice.

26. *Nitrate of zinc*, 1 part; bread mass, 2 or 3 parts. Use in *lupus*, to be spread over the surface thinly.

SOAPS.

27. *Hendrie's* Dispensary petroleum soap. Use in *eczema.*

28. *Juniper-tar Soap* (recommended by Velten of Aix-la-Chapelle). Use in the *squamous diseases* especially.

29. *The common Soft* (potash) *Soap*, used in *chronic infiltration—e.g.*, *lichen circumscriptus* or *chronic eczema.* It may be dissolved in boiling water, ʒj of the soap to ℥ij of water, and scented with some aromatic oil.

30. *The Sulphur Soap.* Use in *scabies* and *prurigo.*

31. *Sapo Laricis* (Moore, *Dub. Hosp. Gazette*, March 15, 1859).—Wheaten bran, ℥iv; glycerine, ʒiij; white curd soap, ℥xxiv; extract of larch bark, ʒvj; and rose-water, ℥xij. Use in *pityriasis*, *psoriasis*, *chronic eczema*, and *herpetic* eruptions.

32. *Pears' Transparent Soap.*—This is the best soap made, though I have a decided objection to the makers' vaunting my name in print in their circular as approving it.

33. There are many other kinds of soap, but I am not in the habit of using them very much—ex., sulphur, carbolic acid, oxide of zinc, &c., a series of which are carefully made by Morstatt and Co.

ASTRINGENTS.

34. Alum, gr. xx; sulphate of zinc, gr. x; glycerine, ʒj; rose-water, ℥iv. Use in *erythema*, *intertrigo*, *eczema*.

35. ℞. Tannic acid, gr. xl; French vinegar, ℥ss; distilled water, ℥vijss. M. Use in *seborrhœa.—Neligan.*

36. ℞. Tincture of krameria, ʒij; creasote, gtt. viij; dilute prussic acid, gtt. viij; distilled water, ℥iv. M. Use in *chronic eruptions with itching.—Neligan.*

37. ℞. Opium, gr. viij; creasote, gtt. x; lard, ℥ij; M. Use in *prurigo* and *lichen.—Neligan.*

38. ℞. Tincture of myrrh, gtt. xxx; oxide of zinc, gr. xx; cold cream, ℥j. M. Use in *prurigo, erythema*, and *lichen.—Neligan.*

39. ℞. Borax, ℈j to ʒj; glycerine, ℥j; rose-water, ℥viij. M. Use in *squamous diseases.*

40. ℞. Oxide of zinc, ʒij; glycerine, ʒij; lead-water, ʒiss; lime-water, ℥vj to viij. M. Use in the secretory stage of *eczema,* in *acne*, in *lichen, foul ulcers, impetigo*, and *herpes.*

41. ℞. Dilute hydrochloric or nitric acids, ʒss to ʒij; acetate of lead, gr. v to x; water, ℥vj. M. Use in *eczematous* and *lichenous affections.*

42. ℞. Alum, ʒij; infusion of roses, ℥xx. M. Use in *acne, pityriasis*, and *eczema* (*sine crustis*).*—Cazenave.*

43. ℞. Sulphate of copper, ʒj; sulphate of zinc, ℥ss; distilled water, ℥xvj; cherry-laurel water, ℥ss. M. Use in *mentagra.—Dupey.*

SEDATIVES—LOTIONS AND OINTMENTS.

Soda.

44. ℞. Carbonate of soda, ʒss; conium juice, ℥j; elderflower water, ℥j. M. Use in *eczema*, *lichen*, *urticaria*, to allay itching.

45. ℞. Bicarbonate of soda, ʒj; glycerine, ʒiss; elderflower water, ℥vjss. Use as above.

45A. ℞. Biborate of soda, ʒij; cherry-laurel water, ℥j; elderflower water, ℥xj. M. Use in *lichen.—Neligan.*

46. ℞. Soda or potash, ʒij; water, ℥vj to ℥viij. M. Use in the early stages of *vesicular and papular diseases* to allay itching.

Morphia.

47. ℞. Borax, ℥ss; sulphate of morphia, gr. vj; rose-water, ℥viij. M. Use in *pruritus vulvæ.—Meigs.*

48. ℞. Solution of hydrochlorate of morphia, ℥iss; solution of potash, ʒij; glycerine, ℥j; cherry-laurel water, ʒj; elderflower water, to ℥xij. Use in *pruriginous eruptions.*

Prussic Acid.

49. ℞. Bichloride of mercury, gr. j; prussic acid, dilute, ʒj; emulsion of almonds, ℥vj. M. Use in *itching*, in *lichen*, in the syphilodermata.

50. ℞. Dilute prussic acid, ʒss to ʒj; infusion of marshmallow, ℥v to ℥viij. M. Use in *pruritus.*

51. ℞. Acetate of ammonia, ℥ij; prussic acid, dilute, ʒj; tincture of digitalis, ʒiij; rose-water, ℥v. M. Use in *pruritus, prurigo, lichen, urticaria.—Thomson.*

52. ℞. Acetate of ammonia, ℥j; prussic acid, dilute, ʒiss; infusion of tobacco, ℥viij. Use, to be sponged on to the part twice a day in *pruritus ani seu vulvæ.*

53. ℞. Borax, ʒj; prussic acid, ʒij; rose-water, ℥viij. Use in the *pruritus* of old people.—*Neligan.*

Cyanide of Potassium.

54. ℞. Cyanide of potassium, gr. vj; cochineal, gr. j; cold cream, ℥j. Use in *pruritus, urticaria.*—*Anderson.*

55. ℞. Cyanide of potassium, gr. v; sulphur, bicarbonate of potash, of each ʒss; cochineal, gr. vj; axungia, ℥j. Use in *eczema* with *pruritus.*—*Anderson.*

56. ℞ Cyanide of potassium, gr, xv; water, ℥viij. Use in *pudendal irritation, lichen,* and *prurigo.* N.B. Keep in a dark place.—*Hardy.*

Chloroform.

57. ℞. Chloroform, ♏vj; cucumber cerate, ℥j. M. Use in *pruritus.*

58. ℞. Carbonate of lead, ʒss; chloroform, ♏iv; cold cream, ℥j. M. Use in *pruritus.*

59. ℞. Chloroform, ♏viij; glycerine, ʒj; white wax ointment, ʒvj; cyanide of potassium, gr. iv. Use in *pruritus.*—*Neligan.*

60. ℞. Acetate of morphia, 1 part; chloroform, 8 parts; lard, 60 parts; oil sweet almonds, 40 parts. Use in *pruritus pudendi*, to be applied two or three times a day.—*Dr. Elleaume.*

61. ℞. Chloroform, ʒj; glycerine, ʒiv. M.—*Dupare.*

62. ℞. Glycerine, ℥ij; bichloride of mercury, gr. iss; chloroform, ♏xx; rose-water, ℥vj. M. Use in *itching*, in *papular* and *vesicular diseases*, and *urticaria.*—*Burgess.*

Belladonna.

63. ℞. Extract of belladonna, ℥ss; hydrocyanic acid, dilute, ℥ss; glycerine, ʒj; water, ℥xiv. M. Use diluted in *papular* and *phlegmonous affections.*—*Startin.*

Digitalis.

64. ℞. Tincture of digitalis, ʒij to ʒiv; glycerine, ℥ss; rose-water, ℥vj. M. Use as a lotion in *pruritus* of purely neurotic character.

Liquid Pitch.

65. ℞. Pitch, ʒj; extract of opium, ℈j; lard, ℥j. M. Use in *obstinate prurigo.*—*Dupare.*

Benzoin.

66. ℞. Sweet almonds, ℥j; orange-flower water, ℥ij; rose-water, ℥viij. Make an emulsion, then add muriate of ammonia, ʒj; tincture of benzoin, ʒij. M. Use chiefly as a cosmetic.—*Herman.*

Lead.

67. Carbonate of lead, gr. iv; glycerine, ʒj; simple cerate, ℥j. M. Use in *erythema.*

68. ℞. Solution of diacetate of lead, ʒj to ʒij; infusion of marshmallow, ℥xvj. M. Use in *lichen* and *chronic eczema.*—*Burgess.*

Rumex.

68 A. Rumex ointment, ℥j; hypochloride of sulphur, ʒij. Use in *acne rosacea.*—*Anderson.*

The rumex ointment is made as follows:—Rumex root, ℥xviij; prepared lard, ℥xij; yellow wax, ℥ij. Bruise the root, boil for two hours in distilled water; strain and evaporate to ℥iv. Add gradually the lard and wax already melted, and stir the whole until cold.

69. ℞. Solution of acetate of ammonia, ʒij; alcohol, ℥ss; rose-water, ℥iv. M. Use in *lichen.*—*Burgess.*

Lime.

70. ℞. Protochloride of lime, ℥ss; almond oil, ʒij; lard, ℥iij. M. Use in *papular itching.—Biett.*

71. Glycerine, ℥j; compound tragacanth powder, ʒij; honey, ʒij; saccharated lime solution, ℥iss; almond emulsion, ℥viij. Use, to protect *herpes, burns, chapped hands*, &c.

Zinc.

72. ℞. Acetate of zinc, gr. ij; rose-water, ʒj; cold cream, ℥j. M. Use in *erythema* and *herpes.*

73. ℞. Oxide of zinc, ʒj; carbonate of lead, ʒj; spermaceti, ℥j; olive oil, q. s. To make a soft ointment. Use in *seborrhœa*, where the skin is inflamed.—*Neumann.*

Camphor.

74. ℞. Camphor, ʒss; alcohol, q. s; oxide of zinc, starch, āā ℥j. M. Use as a powder to allay *burning heat of eczema.—Anderson.*

75. ℞. Camphor, gr. viij; tincture of conium, ʒij; simple cerate, ℥j. M.—*Neligan.*

76. ℞. Camphor, ʒss to ʒj; alcohol, ℥j; borax, ℈ij; rose-water, ℥viij. M. Use in *pruritus, eczema,* and *erythemata.*

Absorbent Powders.

77. ℞. Powdered maize, ℥iv; oxide of zinc, ʒj; calamine, ℥ss. M. *Absorbent powder for excoriated surfaces.*

78. Powdered maize, ℥iv; oxide of zinc, ʒj; iris powder, ℥ss; oil of almonds, gtt. x. Mix. Use as an *absorbent powder.*

Aconitine.

79. ℞. Aconitine, gr. j to gr. v; lard, ʒj. M.

80. ℞. Iodoform, gr. xxx—lx; lard, ʒj. Use to dress *pairful burns, ulcers, chancres,* and *boils.*

81. ℞. Citric acid, ʒij; borax, ʒj; water, ℥viij. Use in *cancerous ulceration.*

STIMULANT AND ABSORBENT REMEDIES.

82. ℞. Soft soap, ʒj; boiling water, ℥xvj; perfume to taste. M. Use in the second stage of *eczema* to counteract the infiltration.

83. ℞. Tar, alcohol, soft soap, āā ʒj. M. Similar to Hebra's *Tr. Saponis Viridis cum pice.* Used in *eczema.*

84. ℞. Alcohol, oil cade, soft soap, āā ℥j; oil lavender, ʒiss. M. More elegant than the former.—*Anderson.*

Kalicreme of Hebra.

85. ℞. Soft soap, ℥ij; spirits of wine, ʒj; dissolve, filter, and add spirits of lavender, ʒij. Mix. Use in *seborrhœa.*

86. ℞. Camphor, gr. x; glycerine, ♏x; fresh lard, ℥j. M. Startin's camphor ointment. Use in *erythematous, vesicular,* and *squamous* diseases.

Borax.

87. ℞. Borax, carbonate of ammonia, āā ʒiss; glycerine ℥j; hydrocyanic acid, dilute, ʒiij; distilled water, ℥xvj. M. Use in *vesicular* and *sebaceous* diseases, diluted from one to four times.—*Startin.*

88. ℞. Borax, ℈ij; oxide of zinc, ʒj; solution of subacetate of lead, ʒij; lime-water, ℥vj to ℥viij. M. Use in *eczema* and *herpes.*

89. ℞. Borax, ʒj to ʒij; glycerine, ʒj; lard, ℥j. M. Use in *parasitic* diseases, *eczema, erythema, intertrigo,* and *lichen.*

90. Borax, ʒj; alum, ʒj; glycerine, ℥ij. Use in *eczema* of the scalp.

91. Acetate of zinc, gr. iij to gr. v; lard ℥j. Use in *lupus.—Weissc.*

Mercurial.

92. ℞. Calomel, ʒj; lard, ℥j. M. Use in *herpes, psoriasis, pruritus vulvæ.*

93. ℞. Protoiodide of mercury, gr. ij to gr. xv; lard, ℥j. M. Use in *acne.—Hardy.*

94. ℞. Bicyanide of mercury, gr. v to gr. x; lard, ℥j. M. *Syphilitic tubercles.*

95. ℞. Biniodide of mercury, gr. v to gr. xx; lard, ℥j. M. Use cautiously in *tubercular syphilis, lupus,* and *acne indurata.*

96. ℞. Iodo-chloride of mercury, gr. iij to gr. x; lard, ℥j. M. Use as above.

97. ℞. Red precipitate, finely powdered, white precipitate, āā gr. vj; lard, ℥j. M. Unguentum mercuriale co. Use in *sebaceous, squamous, ulcerous, tubercular,* and *papular eruptions.—Startin.*

98. ℞. Iodine, ℥ss; glycerine, ʒij; olive-oil, ℥iiiss; strong mercurial ointment, ʒij. M. The linamentum hydrarg. et iodini of Startin. Use in *tubercular* and *cachectic affections.*

99. ℞. Bichloride of mercury, gr. iv; dilute nitric acid, ʒj; dilute hydrocyanic acid, ʒj; glycerine, ʒij; water, ℥viij. M. Startin's Lotio hydrargyri bichloridi. Use in *syphilitic eruptions, pityriasis, chloasma,* &c.

100. ℞. Olive-oil, ℥ij; fresh lard, ℥ij; red precipitate, ʒj; oil of bitter almonds, gtt. x; glycerine, ʒj. M. Startin's lin. hydrarg. nitrico oxydi. Use in *pityriasis.*

Sulphur.

101. ℞. Iodide of sulphur, gr. x to ʒj; lard, ℥j. M. Use in *acne.*

102. ℞. Precipitated sulphur, alcohol, āā ℥j. M. Use in *acne.—Hebra.*

103. ℞. Hypochloride of sulphur, ʒij; subcarbonate of potash, gr x; lard, ℥j; oil of bitter almonds, gtt. x. M. Use in *acne.—Wilson.*

104. ℞. Sulphuret of potassium, ℥ss; lime-water, ℥xvj. M. Use in *pityriasis, pustular,* and *parasitic* diseases.

105. ℞. Sulphuret of potassium, sulphate of zinc, each ʒj; rose-water, ℥iv. Use in *acne indurata.—Bulkley.*

106. Sulphur, glycerine, rectified spirits of wine, carbonate of potash, sulphuric ether, equal parts. To be rubbed into the part affected with *comedo.*

Tar.

107. ℞. Tar, alcohol, āā ℥j. M. Use chiefly in *psoriasis.*

108. ℞. Pyroligneous oil of juniper, ʒj to ʒiij; mutton suet, ℥ss; lard, ℥j. M. Use in *eczema* and *psoriasis palmaris,* &c.

109. ℞. Tar, ʒj; camphor, gr. x; lard, ʒx. M. Use in *pruritus,* in *vesicular* and *papular* diseases.—*Baumé.*

Lead.

110. ℞. Acetate of lead, gr. xv; dilute hydrocyanic acid, ♏xx; alcohol, ℥ss; water, q. s. ad ℥vj. M. Use in *impetigo.*

111. ℞. Iodide of lead, gr. xij; chloroform, ♏xl; glycerine, ʒj; lard, ℥j. M. Use in *eczema* and *psoriasis.—Belcher.*

Silver.

112. ℞. Chloride of silver, gr. v to gr. xv; lard, ℥ss; white wax, ʒij. M. Use in *psoriasis.*

113. ℞. Nitrate of silver, gr. ij to gr. x; water, ʒj. M. Use in *eczema* and *erythemata.*

Bismuth.

114. ℞. Subnitrate of bismuth, ʒij; bichloride of mercury, gr. x; spirits of camphor, ʒss; water, q. s. ad ℥xvj. M. Lotio bismuthi nitratis. Use in *sebaceous*, *pustular*, and *vesicular* diseases, and in *pityriasis*. Use diluted with from 1 to 3 parts water.—*Startin.*

Phosphorus.

115. ℞. Phosphorated ether, ʒj; cerate, free from water, ʒv. M. Use in *lupus, syphilitic tubercles, acne rosacea.—Burgess.*

116. ℞. Phosphorus, gr. ij to gr. v; ether, q. s. to dissolve; camphor, gr. xx; cerate, ℥ss. M. Use as above.

Zinc.

117. ℞. Oxide of zinc, ʒij; calamine powder, ℥ss; glycerine, ʒij; rose water, ℥ [illegible]viij. M. Use in *eczema*, generally where the surface is tender and red.

118. The same + gr. j of the bichloride of mercury.

Creasote.

119. ℞. Creasote, ♏xxx; glycerine, ʒiij; water, ℥vj to ℥viij. M. Use in *pityriasis.*

Various.

120. ℞. Tr. of nux vomica, ℥ss; spirits of camphor, essence of caraway, āā ʒij; distilled water, ℥vij. M. Use in *chronic lichen simplex.—Neligan.*

Hebra's Ung. Diachyli.

121. ℞. *Ung. diachyli albi* (Plumbi).—This is made by boiling together olive oil, ℥xv, and litharge, ℥iij et ʒvj to a good consistence, and adding ʒij of oil of lavender. Use in *eczema*, applied twice a day on linen.

122. ℞. Bichloride of mercury, gr. viij; distilled water, ℥iv; sulphate of zinc, acetate of lead, āā ℈ij; alcohol, ʒij. M. Hardy's lotion for *ephelides*. Use night and morning.

123. ℞. Mezereon bark, horseradish, āā ℥j; distilled vinegar, hot, ℥ij. M. Infuse for a week and strain. Use in *tinea decalvans.—Wilson.*

124. ℞. Persulphate of iron, ʒj; tincture of iodine, soap liniment, āā ℥j. M. Use in *chilblains.*

125. ℞. Bichloride of mercury, gr. j; tincture of benzoin, ʒij; distilled water, ℥vj. M. Virgin's milk. Use in *acne.*

126. ℞. Cod liver oil, tincture of cantharides, āā ℥j. M. Use in *syphilitic alopecia.—Langston Parker.*

127. ℞. Cod liver oil, ℥j; solution of ammonia, ℥ss; tincture of cantharides, ℥ss; honey-water, ℥ij; essence of rosemary, ℥iv. M. Use in *syphilitic alopecia.—Langston Parker.*

128. ℞. Balsam of Peru, ʒij; oil of lavender, gtt. xij; simple cerate, ℥iiss. M. Use in *loss of hair.*

129. ℞. Fowler's solution, ʒj; distilled water, ℥j. M. Use in *lupus.—Hooper.*

130. ℞. Subcarbonate of soda, ʒij; extract of opium, gr. x; slaked lime, ʒj; lard, ℥ij. M. Use in *prurigo.—Biett.*

131. ℞. Oil of bitter almonds, ʒij; cyanide of potassium, gr. xij; Galen's cerate, ℥ij. M. Use in *itching* and *prurigo* with great caution.

132. ℞. Cyanuret of mercury, gr. vj; simple cerate, ℥j. M. Use in *syphilitic ulcers.*

133. ℞. Chloride of lime, ℥ss; oil of sweet almonds, ℥ij; lard, ℥iij. M. Use in *papular itching.*

134. ℞. Hyposulphite of soda, ʒj; glycerine, ℥j; water, ℥iij. M. Use in *pruritus vaginæ.*

135. ℞. Biborate of soda, ʒiss; hydrocyanic acid, dilute, ʒss; glycerine, ʒiij; water, ℥vj. M. Use in *syphilitic palmar psoriasis.—Startin.*

136. ℞. Ammonio-chloride of mercury, ℈j; olive oil, lard, āā ℥j; oil of roses, gtt. vj; tincture tolu, gtt. xx. M. Use in *pityriasis capitis.*

137. ℞. Liq. carbonis detergens, ℥ss; glycerine, ʒss; acid hydrocyanic, dilute, ♏xx; water, ℥x. M. Use in *psoriasis.*

138. ℞. Citrine ointment, ʒij; camphorated oil, glycerine, āā ℥ss. M. Use in *psoriasis.*

139. ℞. Iodide of lead, gr. xij; chloroform, gtt. xl; glycerine, ʒj; adeps, ℥j. Use in *eczema* and *psoriasis.*

EMPLASTRÆ.

Emplastrum Fuscum of the Continentals.

140. ℞. Camphor, ℥ss; black pitch, ʒvj; yellow wax, ʒix; red oxide of lead, ℥ij; olive oil, ℥iv. To be melted together till a little burned. Use in *boils.*

Emplastrum Hydrargyri (German formula).

141. ℞. Mercury, ʒiv; turpentine, ʒij; yellow wax, ʒiij; lead plaster, ℥iss. Use in *acne rosacea.—Neumann.*

MIXTURES.

Chiefly those of use in more obstinate and chronic cases.

Mercurial.

142. ℞. Bichloride of mercury, gr. $\frac{1}{10}$ to $\frac{1}{8}$; dilute hydrochloric acid, gtt. x; water, ℥j. M. Take at one dose.

143. ℞. Bichloride of mercury, gr. j; iodide of potassium, ʒij; water, ℥iij. M. Dose: a dessertspoonful three times a day. Use in *acne.—Burgess.*

144. ℞. Bichloride of mercury, ℈j; iodide of potassium, ʒvj; comp. tincture iodine, ʒij; water, q. s. ad ℥xvj. M. Startin's mist. hydrargyri iodidi. N.B. ʒj contains $\frac{1}{8}$ gr. bichloride and gr. 3 of iodide.

145. ℞. Bichloride of mercury, gr. $\frac{1}{8}$ to $\frac{1}{12}$; arsenious acid, gr. $\frac{1}{20}$ to $\frac{1}{10}$; water ℥ss. M. For one dose in *chronic syphilis.*

146. ℞. Biniodide of mercury, gr. iij; iodide of potassium, ʒj to ʒij; alcohol, ʒij; syr. ginger, ʒiv; water, q. s. ad ℥iss. M. Dose: 30 drops three times a day in *secondary syphilis.—Puche.*

147. ℞. Biniodide of mercury, gr. j to gr. ij; iodide of potassium, ℥ss; water, ℥viij. M. Dose: a tablespoonful in a cup of ptisan, with the waters of Barèges and Louchon.—*Hardy.*

148. ℞. Donovan's solution, or liq. arsenici et hydrargyri iodidi. Dose: ♏x to xxx; ʒj contains gr. $\frac{1}{8}$ of arsenious acid, gr. $\frac{1}{4}$ of peroxide of mercury, and about gr. $\frac{3}{4}$ of iodine converted into hydriodic acid.

149. Bromide of mercury, gr. $\frac{1}{2}$; liquid extract of sarsa, ʒij; compound decoction of sarsa, ʒx. For a dose. Use in obstinate *secondary syphilis.*

150. ℞. Bicyanide of mercury, gr. ij; water, ℥xvj. M. Dose: one tablespoonful night and morning.—*Langston Parker.* Uses—The above are used chiefly in *secondary syphilis;* the 3rd, 5th, 6th, and 8th especially in *tubercular forms;* the 4th and 7th, in *ulceration* when it is of a *syphilitic* nature.

Arsenical.

151. ℞. Wine of iron, ℥jss; simple syrup, ℥ss; Fowler's solution, gtt. xlviij; distilled water, to ℥vj. M. Dose: a tablespoonful twice or thrice a day. ℥j contains ♏iv of arsenical solution.

152. ℞. Fowler's solution, ♏lxxx; iodide of potassium, gr. xvj; iodine, gr. iv; orange-flower water, ℥ij. M. Dose: a teaspoonful three times a day. Use in *eczema.—Neligan.*

153. ℞. Cod-liver oil, ℥ij; one yolk of egg; Fowler's solution, ♏lxiv; syrup, ʒij; distilled water, q. s. ad ℥iv. M. Dose: one teaspoonful three times a day.—*Wilson.*

154. ℞. Bromide of iron, ʒss; Fowler's solution, ʒj; elderflower water, ℥iss; orange-flower syrup, ℥ss. M. Dose: a teaspoonful three times a day. Use in *anæmic* subjects.—*Neligan.*

155. ℞. Arseniate of soda, gr. j to ij; distilled, ℥viij. M. Dose: one tablespoonful daily; then two, in conjunction with, alternately, alkaline and vapour baths, and tincture cantharides night and morning, and the mineral waters of St. Sauveur and Louéche. Use—beneficial in *lichen*, also in *psoriasis* and *chronic eczema.—Hardy.*

156. ℞. Fowler's solution, tincture of cantharides, āā ℥ss. M. Dose: ten drops twice a day, increased to fifteen drops. Use in *psoriasis* especially.—*Bennett.*

157. ℞. Arsenious acid, gr. ij; distilled water, ℥j. M. This is an hypodermic solution. Three drops may be used once daily, to be followed in four days by the injection of three drops twice a day. Five drops may be used after the twelfth day. Use in the treatment of *chronic skin diseases*—ex., *psoriasis, lichen,* &c.

158. ℞. Solution of chloride of arsenic, ʒss; dilute hydrochloric acid, ʒj; tincture sesquichloride of iron, ʒiss to ʒiij; water, to ℥viij. M. Dose: a sixth part three times a day.

Ferruginous.

159. ℞. Sulphate of magnesia, ℥iij; sulphate of iron, ʒij; dilute sulphuric acid, ℥ss; infusion of quassia, q. s. ad ℥xvj. M. Dose: ʒij to ℥ss. Use in *acne, eczema, impetigo,* and *ulcerous affections.* (An aperient tonic.) The mistura ferri acid of *Startin.*

160. ℞. Sulphate of magnesia, ℥v; syrup iodide of iron, ʒj; oil of peppermint, ♏x; water, q. s. ad ℥xvj. M. Dose: ʒij to ℥ss. The mistura iodidi of *Startin.*

161. ℞. Citrate of iron, ʒj; iodide of potassium, gr. xviij; tincture of cantharides, tincture of cardamoms, āā ʒij; water, q. s. ad ℥xvj. M. A sixth part three times a day. Use in *rupia.—Kinnier.*

Various.

162. ℞. Sulphate of magnesia, ʒiv; carbonate of magnesia, ʒj; tincture of colchicum, ♏xl; oil of peppermint, ♏j; water, ℥viij. M. Dose: a sixth part.

163. ℞. Bicarbonate of soda, ʒiij; tincture of calumba, ʒiij; salvolatile, ʒiij; dilute prussic acid, ♏viij; syrup of ginger, ʒiij; distilled water, to ℥vj. M. A sixth part an hour before two principal meals. Use in *dyspepsia.*

164. ℞. Acetate of potash, ℥j; acetic acid, ʒss; spirits of nitrous ether, ℥iss; fluid extract of taraxacum, ʒij. A teaspoonful before meals with water. Use in *acne indurata.—Bulkley.*

165. ℞. Iodide of sodium, gr. lx; compound decoction of sarsaparilla, ℥viij. Dose: a sixth part three times a day in obstinate *syphilitic eruptions* where iodide of potassium disagrees or fails.

166. ℞. Sarsaparilla, ℥xij; water, O. xxiv. Boil for two hours, into which is suspended in a linen bag—Alum, ℥iss; calomel, ℥ss; oxysulphuret of antimony, ʒj; liquorice, ℥iss; senna leaves, ℥ij; aniseed, ℥ss. Remove from the fire and allow it to infuse. Strain off sixteen pints. This is decoction No. 1. To make decoction No. 2, take the residue of No. 1, with sarsaparilla, ℥vj; water, O xxix; orange peel, cinnamon, cardamoms, āā ʒiij; liquorice, ʒvj. Infuse and strain sixteen pints. Use in *tertiary syphilis.—Zittman.*

167. ℞. Turpentine rectified, ʒss to ʒiss; creasote, ♏viij; spirits of rosemary, ♏xl; water, q. s. ad ℥iv. M. Dose: two teaspoonfuls every three hours. Use in *purpura.—Budd.*

167a. ℞. Tincture of guaiacum, ʒj; tincture of aconite, ♏xx; camphor mixture, ℥vj. M. Dose: ℥ss three times a day in *chronic skin diseases.*

168. ℞. Borax, ʒj; bitartrate of potassa, ℥ss; white sugar, ʒij; water, ℥xvj. M. Dose: two tablespoonfuls every six hours. Use in *erythema nodosum.—Neligan.*

169. ℞. Almond oil, ℥ss; olive oil; ℥ij; iodine, gr. ½. M. Dose: a third part three times a day. Use in *scrofulous* eruptions.—*Duncan.*

170. ℞. Compound tincture of guaiacum, ʒj; tincture of serpentaria, ʒss; mucilage, ♏xx; decoction of mezereon, ʒviiss; decoction of dulcamara, ℥j. M. To be taken three times a day for *psoriasis guttata.*—*Neligan.*

Phosphorus.

171. ℞. Phosphorus, gr. x; almond oil, ℥j. M. Dose: five or ten drops in emulsion.

172. ℞. Phosphorus, 4 parts; ether, 100 parts. M. Dose: five to ten drops. Use in *acne* especially.

Strychnine.

173. ℞. Strychnine, gr. ½—1; dilute phosphoric acid, ʒiij; tincture of orange peel, ℥ss; infusion of cloves, ℥xj. M. Dose: half an ounce three times a day. Use in *prurigo* and *lichen.*

174. ℞. Dilute nitric acid, ʒss; dilute phosphoric acid, ʒj; solution of strychnine, ♏xviij; tincture of orange peel, ʒiv; syrup of ginger, ʒiv; water to ℥vj. A sixth part twice a day. Use in *debility.*

PILLS, ETC.

Mercurial.

175. ℞. Iodo-chloride of mercury, gr. iv; gum Arabic, gr. xv; bread crumb, ʒiiss; orange-flower water, q. s. Make 100 pills. Dose: one to three daily. Use in *acne.*—*Rochard.*

176. ℞. Biniodide of mercury, gr. j to ij; extract gentian, ℈ij. Make 12 pills. One pill twice a day.

177. ℞. Protoiodide of mercury, gr. xvj; extract of lettuce, ʒss. Make 40 pills. Dose: one to four daily. Use in *syphilodermata.*

178. ℞. Bicyanide of mercury, gr. xxiv; muriate of ammonia, ʒiij; guaiacum, ʒiij; extract of aconite, ʒiij; oil of anise, gr. xxiv. Make 400 pills. Dose: one pill three times a day. Each pill contains $\frac{1}{16}$ gr. of the bicyanide. Use in *syphilis.* —*Langston Parker.*

179. ℞. Bicyanide of mercury, gr. j; quinine, gr. xx; extract of gentian, gr. xxx. To make 20. One twice a day. Use in *ordinary syphilitic eruptions.*

Arsenical.

180. ℞. Arseniate of soda, gr. ij; water, sufficient to dissolve; guaiacum powder, ʒss; oxysulphuret of mercury, ℈j. Mucilage sufficient to make 24 pills. Dose: one two or three times a day. Use in *chronic skin diseases.*—*Wilson.*

181. ℞. Arseniate of soda, gr. ij; extract of hops, gr. xx; sulphate of iron, gr. xx; extract of nux vomica, gr. iij. M. Make 24 pills. One three times a day. Use in *chronic eczema* and *psoriasis.*

182. ℞. Levigated arsenious acid, gr. v; powdered acacia, ʒss; cinnamon powder, ʒiij; glycerine, enough to make 100 pills. Pil. Arsenicalis composita. Dose: one or two a day. Each pill contains $\frac{1}{20}$ gr. arsenious acid.

183. ℞. Arsenite of iron, gr. iij; extract of hops, ʒj; powdered marshmallow, ʒss. Orange-flower water enough to make 48 pills. Dose: one to two daily. Use in *chronic psoriasis* and *lupus.*—*Biett.*

184. ℞. Iodide of arsenic, gr. ij; manna, gr. xl; mucilage, q. s. Make 20 pills. Dose: one pill three times a day. Use in *psoriasis.*

Variæ.

185. ℞. Extract of aconite, extract of dandelion, āā gr. xv. Make 40 pills. Dose: two pills night and morning. Use in *prurigo*, in conjunction with starch baths and arseniate of iron.—*Cazenave.*

186. ℞. Extract of nux vomica, gr. iij; inspissated ox-gall, gr. vj; extract of dandelion, gr. xxiv; myrrh, gr. xxiv. Make 24 pills. Dose: one pill three times a day. Use in *prurigo.—Neligan.*

187. ℞. Phosphorus, gr. iij to gr. xx; almond oil, gtt. x to lx; powdered acacia, q. s. Make 12 pills. Dose: one twice a day. Use in *lupus* and *syphilitic tubercular* disease.—*Burgess.*

188. ℞. Sublimed sulphur, ℥ij; bitartrate of potassa, ʒj; powdered rhubarb, ʒij; powdered guaiacum, ʒj; honey, ℔j. M. Dose: two tablespoonfuls three times a day. Use in *chronic skin* disease.

REMEDIES FOR PARASITIC DISEASES.

Those agents which are destructive to parasites are termed Parasiticides.

Remedies for Scabies and Prurigo.

189. ℞. Sulphuret of potassium, ℥vj; white soap, ℔ij; olive oil, Oij; oil of thyme, ʒij. M. Use in *scabies* and *prurigo.—Author.*

200. ℞. Olive oil, ℥ij; sulphate of potash, ʒxv; sulphate of soda, ʒxv; precipitated sulphur, ʒx. M. Use in *scabies.—Mollard.*

201. ℞. Sulphur, tar, āā ℥vj; soft soap, lard, āā ℥xvj; chalk, ℥iv. M. Use in *scabies.—Hebra.*

202. ℞. Lard, ℥ij; sulphur, ʒv; carbonate of potash, water, āā ʒij. M. Use in *scabies.—Hardy.*

203. ℞. Ammonio-chloride of mercury ointment, ℥j; musk, gr. ij; oil of lavender, gtt. ij; almond oil, ʒj. M. Use in *prurigo* and *scabies.—Wilson.*

204. ℞. Iodide of sulphur, iodide of potassium, āā ʒiss; water, ℥xxxii. M. Use in *scabies.—Cazenave.*

205. ℞. Olive oil, ℥ss; lard, ℥ss; powdered stavesacre, ʒij. M. Use in *phthiriasis.*

206. ℞. Chamomile powder, lard, olive oil, āā ℥j. M. Use in *scabies.* Said to cure in three frictions.—*Bazin.*

207. ℞. Sublimed sulphur, ʒss; ammonio-chloride of mercury, gr. v; sulphuret of mercury with sulphur, gr. x. Mix, and add olive oil, ʒij; creasote, gtt. iv; fresh lard, ʒij. M. Use in *scabies.* Ung. sulphuris co. of *Startin.*

208. ℞. Olive oil, ℥ss; adeps, ℥ss; powdered stavesacre, ʒij. Mix. Use in *phthiriasis.*

Vlemingk's Solution.

209. ℞. Quicklime, ℔j; flowers of sulphur, ℔ij; water, ℔xx. Boil until 12℔ remain, and then filter. Use in *scabies.*

210. Iodide of potassium ointment is very efficacious in *scabies.*

211. ℞. Sulphur ointment, ʒij; oil of chamomile, gtt. xx. M. Use in *scabies.*

212. For *phthiriasis* the ordinary white precipitate ointment of the Pharmacopœia is as good as any.

213. ℞. Liquid storax, ℥j; adeps, ℥ij. Melt and strain. Use in *scabies.—Anderson.*

REMEDIES FOR VEGETABLE PARASITIC DISEASES.

1. *Vesicating Parasiticides (to be applied, when it is desired, at the outset, to destroy the fungus in an early stage of disease).*

214. ℞. Bichloride of mercury, ℈ij; dilute hydrochloric acid, ʒss; alcohol, ʒiv. M. Use in early stages of *tinea tonsurans.* N.B. This formula is not mine.

215. ℞. Bichloride of mercury, gr. x to xx; elderflower ointment, ʒj. M. Use in early stages of *favus* and *tinea tonsurans.*

216. ℞. Compound tincture of iodine, ℥j; iodine, gr. x; iodide of potassium, gr. xv. M. Use in *chronic stages* of parasitic disease. See also No. 25.

217. ℞. Carbolic acid, ʒj; glycerine, ℥ss to ℥j. M. Use in *tinea tonsurans.*

218. ℞. Powdered cantharides, ℥ij; concentrated pyro-acetic acid, ℥viij; tannic acid, ℥j. M. Macerate for a week and strain. Use in *tinea decalvans.—Startin.*

2. *Milder Parasiticides* (*for ordinary use*).

219. ℞. sulphuret of potassium, ʒiij; soft soap, ℥j; lime-water, ℥viij; alcohol, ℥ij. M. Use in *scabies* and *ringworm.—Green* .

220. ℞. Hyposulphite of soda, ℥iij; dilute sulphurous acid, ℥ss; water, q. s. ad ℥xvj. M. Use in all forms of *parasitic disease.—Startin.*

221. ℞. Bichloride of mercury, gr. ij to iv; alcohol, ʒiv; muriate of ammonia, ʒss; rose-water, q. s. ad ℥vj. M. Use in *scabies, phthiriasis,* and *tinea versicolor.*

222. ℞. Precipitated sulphur, ʒij; spirits of camphor, ʒss; glycerine, ℥ss; bisulphuret of mercury, ℈ss; powdered starch, ʒij; water, ad ℥xvj. M. Use in *tinea tonsurans.—Startin.*

223. ℞. Carbolic acid, ʒij; glycerine, ℥j; rose-water, q. s. ad ℥viij. M. Use especially in *tinea circinata.*

224. ℞. Borax, ʒij; glycerine, ʒj; lard, ℥j. M. Use in *tinea circinata.*

225. ℞. Yellow sulphuret of mercury, ʒss; oil of almonds, glycerine, āā ʒij; lard, ℥ij. M. Use in *tinea.—Bazin.*

226. ℞. Pyroligneous oil of juniper, ʒij to ʒiv; lard, ℥ijss. M. Use in *tinea.*

227. ℞. Hyposulphite of soda, ʒiv; glycerine, ℥j; distilled water, to ℥vj. Use in *tinea versicolor* and in *pruritus vulvæ.*

228. ℞. Soft soap, ʒij; pyroligneous oil of juniper, alcohol, glycerine, āā ℥ss. M. Use in *tinea.—Begbie.*

229. ℞. Biborate of soda, ʒiv; glycerine, ʒij; water, q. s. ad ℥vj. M. Use in *tinea versicolor.*

230. ℞. Citrine ointment, ʒiv; sulphur, ʒij; creasote, gtt. x; lard, ℥j to ℥ij. M. Use in ordinary *ringworm* and *tinea sycosis.*

231. ℞. White precipitate, gr. vj; red precipitate, powdered, gr. vj; lard, ℥j. M. Use in all forms of *ringworm.—Startin.*

232. ℞. Sulphur, tar ointment, āā ℥j; glycerine, ʒiv. M. Use same.

233. ℞. Carbonate of copper, ʒij; lard, ℥j. M. Use generally in *parasitic* diseases, especially in *tinea sycosis.—Devergie.*

Depilatories.

234. ℞. Fresh lime, ʒij; sal sodæ, ʒiij; simple cerate, ℥ij.—*Rayer.*

235. ℞. Sulphuret of arsenic, ʒj; fresh lime, ʒij; starch powder, ʒiij. M. To be made into a paste with water, and allowed to remain on the skin for five minutes, or until a sensation of heat is produced.

236. ℞. Sulphuret of soda, 3 parts; starch, 10 parts; lime, 10 parts.

237. ℞. Lime, ℥iss; sulphuret of arsenic, ʒj; starch, ʒx.

Soothing Applications.

238. ℞. Oxide of zinc ointment benzoated, ℥ij; glycerine, ʒiij; spirits of rosemary, gtt. xv.

239. ℞. Laudanum, Goulard's extract of lead, āā ℥ij to ʒiij; elder ointment, ℥ij.

Special Stimulants of the Scalp.

240. ℞. Glycerine, ʒiij; lime-water liniment, ℥iv; tincture cantharides, ʒiij. M.

241. ℞. Distilled vinegar, ℥iiiss; tincture cantharides, ʒvj to ʒviij; rose-water, ℥iiiss. M.

242. ℞. Strong ammonia liniment, ℥ss; castor oil, ℥ss; spirits of turpentine purified, ℥ss; white precipitate, gr. xv. M. Brush into the scalp with a hard nail-brush until irritation is set up.

243. ℞. Tincture of cantharides, ℥j; distilled vinegar, ℥iss; glycerine, ʒiss; spirits of rosemary, ℥iss; rose-water, to ʒviij. M. To be well sponged on to the scalp night and morning.

GLOSSARIAL INDEX.

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Achor (αχὼρ scurf) is a term at one time applied to a small acuminated pustule of the scalp, containing straw-coloured pus, and succeeded by a thin brown or yellowish scab. The word has now fallen quite into disuse, 37.

Achorion. The generic name given to the vegetable parasite in tinea favosa. It is probably a form of penicillium glaucum, 430.

Acarus. A genus of minute insects belonging to the acarides in the division of arachnides. The following two varieties are found on man :—(1) acarus autumnalis—the harvest-bug—(2) acarus scabiei, or itch insect, p. 419. The so-called acarus Stockholmii is probably a species of tick, and the acarus folliculorum is now termed steatozoon folliculorum, 490.

Acarus scabiei (difference of sex), 419 ; habits of, 417 ; selective seat of, 418 ; male, 419 ; female, 420.

Acne should really be acme, from the Greek ἀκμή. Dr. Greenhill believes that in the word "acne" the *n* is by mistake placed for *m*, and that this error arose with Aetius. By acne is meant an inflammation of the sebaceous follicles due to retention of sebaceous matter, and this was thought to occur at the *acme* of the system, 483.

Acne, general description of, &c., 483 ; syphilitic, 289 ; from tar, 133.

Acrochordon (ἄκρος extreme, and χορδή a string). A wart which has a pedicle or a thin neck by which it hangs from the skin : a pedunculated wart, 334.

Acrodynia (ἄκρον the extremity, and ὀδύνη pain). The name given by Alibert to an epidemic erythema as occurring in Paris some years since, in which there were severe pains of rheumatic character about the wrists and ankles.

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Agrius, an adjective signifying inflamed, derived from αγριος angry, fierce, &c. *See* Lichen Agrius, 139.

Aleppo evil, 245.

Alibert's keloid, 347.

Alopecia signifies baldness—derived from ἀλώπηξ a fox, in whom the hair falls out in mangy places, 500.

Alopecia areata, 501.

,, syphilitic, 294.

Allosteatodes (ἄλλος other, στέαρ fat), altered sebaceous secretion, 488.

Alphos (ἀλφός white), a term applied to lepra vulgaris because of its abundant white scales, 259.

Anæsthesia, 396.

Anæsthetic leprosy, 313.

Anatomy of the skin, 14.

Angeiectasis (ἀγγεῖον a vessel, ἔκτασις extension), a term applied to hypertrophy of the vessels of the skin, or nævoid growths, 364.

Angeioleucitis (ἀγγεῖον a vessel, λευκὸς white, *itis* signifying inflammation), inflammation of the lymphatics.

Anidrosis (α not, ἵδρωσις perspiration), deficiency or even absence of perspiration, 480.

Anomalous exanthem, a term applied to those rosy rashes which are like measles and scarlatina. False measles, rubella, 93.

Anthrax (*ἄνθραξ* a burning coal), a term applied to carbuncle, from its dark coal-like appearance. It is also thought that the word carbuncle was used to designate the disease from the supposed resemblance of the inflammatory swelling to the stone carbuncle, 232.

Area, a bald spot (from *areo*, to be dried up). It has the same significance as alopecia. The ordinary bald spots on the head are called alopecia areata, 501.

Army itch, 423.

Arsenical remedies, *see* Formulæ, Nos. 515 et seq.

„ caustic, *see* Formula, No. 17.

„ rashes, 133.

Asteatodes (*α* not, *στέαρ* fat), deficient secretion of sebaceous matter, 487.

Atrophic diseases, 330.

Atrophia (*α* not, *τροφή* nourishment), deficient nourishment, atrophy.

Aurungzebe, synonym of Delhi boil, called after the emperor of that name, who had the disease, 241.

Bacchia, a synonym of acne rosacea (from Bacchus, the god of wine); it being supposed that the too free use of spirits was the cause of the disease, 494.

Bakers' itch, 139.

Baldness, 501.

Baras, an Arabian designation for leprosy.

Barbadoes leg (bucnemia tropica, or elephantiasis Arabum), hypertrophy of the fibrous tissues of the legs, commences with inflammation of the lymphatics, 358.

Baths, *see* Formulary, Nos. 1 to 13.

Beaupurthey treatment of leprosy, 328.

Belladonna rash, 135.

Berat, one of the ancient terms used to designate the true leprosy; it signifies "bright spot." Berat lebena was the bright white leprosy, or the leuce of the Greeks, and berat cecha the dark leprosy, or the melas of the Greeks.

Bhau Daji treatment of leprosy, 328.

Biskra bouton, 246.

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Boak, the Hebrew term for the lepra vulgaris, or alphos of Celsus.

Boils, 231.

Bots, 406.

Bouton d'Alep, 245.

Bricklayers' itch, 139.

Bromidrosis (*βρῶμος* a stench; *ἱδρώς* sweat), fetid perspiration, 480.

Bromides, eruptions from, 134.

Bucnemia (*βου*, a Greek augmentative, *κνήμη* the leg), the same as Barbadoes leg. Literally, bulky or tumid leg, 358.

Bucnemia tropica, 358.

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Bug bites, 406.

Bulla, from the Latin *bulla*, a bubble. It is the term applied to blisters or large vesicles, as seen in herpes and pemphigus, 32.

Bullous diseases, 199.

„ „ of syphilitic nature, 287.

Cacotrophia (*κακή* bad, and *τροφή* food), ill-nourishment.

Callosities (*Callosus*, thick-skinned), 333.

Calvities, from *calvus* bald, a term generally signifying the baldness of old age.

Cancer, Latin for a crab, 382.

Cancroid, cancer, and *εἶδος* likeness, is the term applied to diseases like cancer, or semi-malignant affections like kelis.

Canities (*canus* hoary), whiteness of the hair.

Catarrhal inflammation, *see* Eczema.

Carate (from the Portuguese *carâs*, complexion), a pigment disease (deficiency) seen in New Granada, 403.

Carbuncle, differently derived by authors, from *carbo* charcoal, because of the black slough, or carbuncle, because of the red and fiery nature of the disease itself, 232.

Carcinoma (*καρκίνωμα*=*κάρκινος*, cancer), 382.

Causes, general summary of, 49.

Caustics, *see* Formulæ, Nos. 14 to 26.

Chalazion (*χάλαζα* hail or sleet). It is the term sometimes applied to the little sebaceous cysts found in the eyelids, which look like hail-stones.

Charbon, 238.

Cheloid (*χηλή* a crab's claw, and *εἶδος* likeness), the disease usually called keloid, which consists of an indurated mass putting forth processes at its edge that resemble a crab's claw. *See* KELOID.

Chigoe, 406.

Chionyphe Carteri, 470.

Chloasma (*χλοάζω* to be pale green), generally applied to the brownish stain of pityriasis (or tinea) versicolor, one of the ringworms, but used by Hebra to signify pigmentary discoloration, 462.

Chromatogenous (*χρῶμα, χρώματος* colour, *γέννάω* to produce), a term applied to the group of diseases in which the colour of the skin is changed, 399.

Chromidrosis (*χρῶμα* and *ἴδροσις* sweating), coloured sweating, 481.

Cicatrices, 47.

Cimex lectularius, or bed bug, 406.

Cingulum, the Latin for a girdle, and applied to herpes zoster or shingles.

Classification, 56.

,, Willan's, 56.

Clavus (a nail), a term signifying a corn or callosity, 333.

Climate, different disease in different, 9.

Cnidosis (*κνίδωσις* an itching, caused by the nettle or *κνίδη*), the term used by Alibert to designate the nettle-rash.

Cochin China ulcer, 249.

Colour, alterations of, in disease, 399.

Comedones (*comedo* a glutton), the small sebaceous plugs or concretions that form in acne ; they are also called *grubs,* 490.

Condylomata, 334.

Contagious impetigo, 224.

Corium (*χόριον* any skin or leather), structure, 17.

,, remarks on diseases of, 25.

,, diseases of, 339.

Copaiba eruptions, 135.

Corns, 333.

Couperose, the French for *copperas.* *Goutte rose*, signifying acne, in which the colour is reddish.

Cow-pox, a synonym of vaccinia.

Crusts, 44.

Crusta lactea, literally milk crust. This is a term that is generally applied to an impetiginous eczema in children, in which the crusting is free and light-coloured ; but it has been made to include many different affections, and has no definite signification. *See* ECZEMA.

Cutaneous hæmorrhages, 392.

Cutaneous neuroses, 395.

Cyanoderma (*κυάνεος* blue, *δέρμα* skin), a blue discoloration of the skin, 403. *See* CHROMIDROSIS.

Cyanopathia (*κυάνεος* blue, *πάθος* disease), the blue disease, or cyanosis.

Cysts of perspiratory glands, 485.

,, sebaceous glands, 491.

DACTYLITIS syphilitica (*δάκτυλος* a finger), a tertiary disease, 297.

Dandriff, or Dandruff, signifies scurfiness, pityriasis of the scalp, 331.

Dartre (*δαρτός*, flayed), a term applied by the French to the group of diseases including eczema, lepra vulgaris, lichen, and pityriasis. These are supposed to depend upon a "dartrous diathesis." The word *dartre* is equivalent to tetter.

Delhi Boil, an endemic disease of India, 241.

Demodex folliculorum (*δημὸς* fat, *δάκνω, δηξομαὶ,* to bite (Hoblyn). The term given by Owen to the insect found in the sebaceous matter ; called by Wilson steatozoon folliculorum, 490.

Dengue, or dandy fever, 101.

Depilatory (*de* from, *pilus* a hair), a remedy which causes the hair to fall off ; it is usually made up of quicklime, subcarbonate of potash, and sulphuret of antimony. *See* FORMULÆ, Nos. 234 to 237.

Dermatitis (*δέρμα* skin and *itis* signifying inflammation), inflammation of the skin.

Dermatalgia (*δέρμα* skin, and *ἄλγος* pain), neuralgia of the skin.
Dermatolysis (*δέρμα* skin, and *λύσις* looseness), of the skin when it hangs in folds, 358.
Dermatology (*δέρμα* skin, and *λόγος* a discourse); that branch of science which relates to the physiology and pathology of the skin.
Dermatophyton (*δέρμα* skin, *φυτὸν* a plant, a vegetable parasite). The diseases in which fungi occur are called dermatophytic, 425.
Dermatophytic diseases, 425.
Dermatospasmus, means spasms of the skin.
Dermatopathia, diseases of the skin in general.
Dermatosis is used in the same way to designate diseases of the skin as a whole.
Dermatozoa (*δέρμα* skin, *ζῶον* an animal), animal parasites, 405.
Dermic means relating to the skin; Dermoid, skin-like.
Diagnosis (*διάγνωσις*, a distinguishing), the art of distinguishing diseases.
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Diathesis (*διάθεσις* a placing in order, a disposition), the general term for certain constitutional tendencies, such as the rheumatic, scrofulous, hæmorrhagic.
Diathesis, gouty, 11, 71.
  ,, influence in skin diseases, 11.
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Dracunculus (deriv. of *draco*, a dragon), the Guinea-worm, 407.
Dyers, diseases in, 51.
Dyes, diseases from, 108.
Dyschroma (*δὺσχροια*), discoloration of the skin.
Dyscrasis (*δὺσκρασια* bad state of body), a faulty state of the fluids of the blood.
Dysidrosis (*δὺς*, signifying difficult, *ἵδρωσις* sweating), 476.

Ecchymosis (*ἐκχύμωσις*), extravasation of blood.
Ecphyma (*ἔκφυμα*), a pimply eruption. Mason Good applied the term to corns, warts, and the like.
Ecthyma (*ἔκθυμα* a pustule), a variety of pustular disease, 227.
  ,, syphilitic, 289.
Ectrotic (*ἐκτρωτικὸς* abortive), a term applied to remedies that arrest the development of disease.
Eczema (*ἔκζεμα*, from *ἐκζειν* to boil over), a variety of cutaneous diseases of vesicular nature, 162.
Eczema, definition of, 163.
  ,, diagnosis, 182.
  ,, etiology, 174.
  ,, infantile, 167.
  ,, local varieties of, 167.
  ,, marginatum, 170, 450.
  ,, treatment, 185.
  ,, varieties of, 163.
Elementary lesions, the types of form assumed by skin diseases, 27.
Elephantiasis (*ἐλέφας* an elephant). This designation is applied to two different diseases in which the skin is swollen and indurated like an elephant's skin. The one is elephantiasis Græcorum or true leprosy (310), the other elephantiasis Arabum (Barbadoes leg), or more generally now known as bucnemia tropica, or spargosis, 358.
Elephant leg, 358.

Ephelis (ἐπὶ upon, ἥλιοσ, the sun), sunburn or freckles, 403.
Ephidrosis (ἐφίδρωσις slight perspiration), moderate sweating.
Epidermis (ἐπιδερμίς the cuticle), structure of, 15.
Epidermophyton (ἐπιδερμίς epidermis, φυτὸν a plant), a fungus attacking the epidermic cells.
Epinyctis (ἐπὶ upon, νύξ the night), a pustule painful at night. The term was applied by Sauvages to ecthyma.
Epiphyta (ἐπὶ upon, φυτὸν a plant, epiphytes), fungi found on the surface, 429.
Epithelioma, epithelial cancer, 382.
Epizoa (ἐπὶ upon, ζῶον an animal), animal parasites living upon the surface, such as acari, lice, &c., 405.
Equinia (*equus* the horse), the equine disease, 94.
Erysipelas (ἐρυθρὸς red, πελλα skin), a peculiar kind of skin inflammation dependent on a special poison, 88.
Erythema (ἐρύθημα redness), simple redness of the skin, 28.
  ,, as a separate disease, 107.
Erythemata, diagnostic features of, 63.
Erythematous diseases, 107.
Eruption, multiformity of, 8.
  ,, uniformity of, 8.
Essentials of skin diseases, 4.
Esthiomenon (from ἐσθίω to eat), eating; an ulcerating or eating out sore; generally applied to lupus in olden time.
Etiology of skin diseases, 49.
Exanthem (ἐξάνθημα a breaking out). A term applied to febrile diseases which are accompanied by erythematous eruptions.
Excoriations, 47.
Excreta, influence of retained, 70.
Exormia (ἐξορμή a going or breaking out). This is an old appellation of ecthyma, probably.

Farcy (from *farcio* to stuff). The disease is a variety of equinia or glanders, 94.
Favus (a honeycomb), one of the parasitic diseases in which the fungus grows up into mass like honeycomb; it is properly called tinea favosa, 429.
Ferruginous mixtures, *see* Formulæ, Nos. 159 to 161.
Fibroma (*fibra* a fibre), the disease in which tubercles formed by hypertrophy of the white fibrous tissue of the skin occurs. This is often called fibroma molluscum, 351.
Filaria medinensis, the guinea-worm, 407.
Fish-skin disease—*i.e.*, ichthyosis, 335.
Frambœsia or yaws, a disease seen in hot climates, in which tubercles like raspberries appear; hence the derivation, *framboise* a raspberry, 95.
Flannel, its action as an irritant, 52.
Fleabites, 405.
Follicular hyperæmia, 127.
Freckles, 402.
Fungi, parasitic, detection of, structure, &c., 426, 427.
  ,, of favus, 430.
  ,, tinea tonsurans, 433.
  ,, tinea circinata, 455.
  ,, tinea sycosis, 458.
  ,, tinea versicolor (chloasma), 463.
  ,, decalvans, 460.
Fungus foot of India, Madura foot or podelkoma, or ulcus grave. A disease of the foot and hand, due to the presence and development of a fungus allied to a mucor, and named Chionyphe Carteri, 468.
Functional disturbance of internal organs, 10.
Furfuraceous (from *furfur*, bran), branny, scaliness.
Furunculus (a boil), supposed to be derived from *fur*, a thief, 231.
Furuncular affections, 230.

Gale, the French for itch.
Gelatio (from *gelare*, to freeze), frost-bite.
Glands, anatomy of, sebaceous, 21.
  ,, sweat, 22.

Glands, diseases of—
  ,, sebaceous, 486.
  ,, perspiratory, 475.
Glanders, 94.
Gnats, eruptions caused by, 425.
Gouty diathesis, 11.
Gout, influences of, 71.
Gown-red, toothrash or strophulus.
Grando (a hailstone). *See* CHALAZION, a small sebaceous cyst of the eyelid, like a hailstone.
Grocer's itch, 139.
Grutum, the term signifying grit, and meant to express the millet-seed or grit-like appearance of enlargements of the sebaceous glands of the face.
Guinea-worm disease, 407.
Gum-red, a synonym of strophulus.
Gutta rosacea, literally a rosy drop; in French, *goutte rose;* Latin, *gutta*, a drop; a term applied to acne rosacea, 483.

HÆMATODYSCRASIA (*αἷμα, αἷματος*, blood; *δὐσκρασία* bad temperament), an unwholesome condition of blood.
Hæmatoma (*αἱματοω* to make bloody), a sanguineous cyst.
Hæmidrosis (*αἷμα* blood, *ἵδρωσις* sweating), blood perspiration.
Hair follicle, structure of, 19.
Hair, diseases of, 402.
Handicrafts as causes of disease, 52.
Harvest-bug, the acarus autumnalis.
Henle's layer, 21.
Hereditary syphilis, 277.
Herpes (*ἕρπω* or *ερπειν* to creep), originally signifying a creeping or spreading eruption, and applied to ulcerating diseases such as lupus. Now it is limited to an eruption of vesicles seated upon a red base, 200.
Herpes and its varieties, &c., 200—219.
  ,, iris, 203, and also 218 *et seq.*
  ,, syphilitic, 285.
Herpetic diathesis, 200.
Herpetism, 200.
Heterologous (*ἕτερος* other, and *λόγος* an account), a term applied to new formations, differing in character from tissues which already exist normally in the body, such as cancer, tubercle.
Heteroplasia (*πλασὶς* formation). It has the same signification as the last word—literally abnormal structure.
Hidroa and Hidrosis (*ἰδρὼς* sweat, *ἵδρωσις* sweating); the first is a term for miliaria, but is used differently by Bazin, 215; the second for excessive sweating, 475.
Hives, the popular name for chicken-pox.
Hordeolum (a diminutive of *hordeum* barley), a sty or inflamed Meibomian gland in the eyelid, so named from its resemblance to a *barley-corn*, 231.
Horn-pock, the modified form of small-pox, in which the vari abort and dry up into hardish papulations.
Horns, 333.
Hospital practice, 9.
Huxley's layer, 21.
Hydrargyria (*ὑδράργυρος* mercury), the erythema produced by mercury applied locally; it is sometimes called *eczema mercuriale.*
Hydroa (*ὕδωρ*, water) is the same as *hidroa*, 215.
Hydro-adenitis (*ὕδωρ* and *adenitis*, gland inflammation), inflammation of the sweat glands, 485.
Hyperæmia (*ὑπέρ*, over or above, and *αἷμα*, blood), excess of blood; congestion of an active kind.
Hyperæsthesia (*ὑπέρ* over and *αἴσθησις*, sensation), exalted sensibility of a part, 396.
Hyperidrosis (*ὑπέρ* in excess, and *ἵδρωσις*, sweating), excessive sweating, 475.
Hyperplasia (*ὑπέρ* above, and *πλάσις*, conformation), excessive formation of tissue.
Hypertrophy (*ὑπέρ* and *τροφὴ*, nutrition), an excess over and above the standard nourishment of a part, by which change of size and form are brought about—in a word, excessive growth.

Hypertrophia venarum, 363.
Hypertrophic and atrophic affections, 330.

Iatraleptic method (*ἰατρός*, surgeon, *ἀλείφω*, to anoint), the mode of medication by friction of medicines.
Ichthyosis (*ἰχθὺς*, a fish), the fish-skin disease, from the resemblance of the scales of the disease to those of a fish, 335.
Idrosis, same as Hydrosis.
Impetigo (*impeto* to attack, or *impetire* to infest). It has been applied to very many different diseases in past times. It is now used as designating pustular eczema, 165, 223.
Impetigo contagiosa, 223.
Impetigo rodens, 223 (footnote).
Inflammatory products, 105.
Intertrigo (*inter* between; *tero* to chafe), a chafe gall or fret. The excoriated surface produced by the friction of two surfaces of the skin, 108.
Introduction, 1.
Ionthos (from *ἴονθος* the root of the hair, allied to *ἀνθεώ* to bloom, according to some, from *ιον* violet, and *ἄνθος* a flower). It was applied to the acne of the face that appears at puberty when the hair of the beard is forming.
Iron, preparations of, *see* Formulæ, Nos. 159, 161.
Italian leprosy, 128.
Itch, *psora* of the Greeks, *scabies* of the Latins, 417.
  ,, insect, the acarus scabiei, 420.
  ,, bakers', bricklayers', grocers', washerwomens' itch, *see* Lichen Agrius, 139.

Jazam or Juzam, an Oriental term for leprosy, 310.

Kelis, Keloid (*κηλή* a tumour, and *εἶδος* like). Others derive the words from *χηλὴ*, a seabank or mole, or *κηλίς*, a stain. By these terms are signified a hypertrophous growth of the fibrocellular tissue of the skin, 347. *See* also Cheloid.
Keloid of cicatrices, 348.
Kerion (*κηριόν*, a honeycomb), a form of vegetable parasitic disease allied to tinea tonsurans. The follicles are inflamed and pour out a viscid secretion, 445.
Keratoses (*κέρας*, *κέραῖος*, a horn), 330.
Kidney disorder, influence of, 10.
Kidinga pepo, 103.

Lentigo, Lenticula (*lens*, *lentis*, a lentil), a freckle ; lentil-shaped maculæ ; they are not seasonal like sunburn, 402.
Leontiasis (*λέοντιασις*, lion like), a term applied to the lion-like aspect of the face in tubercular leprosy, 310.
Lepra (*λέπρα* leprosy, from *λεπρός* scaly). A term applied at one time to true leprosy, but now to the scaly disease lepra vulgaris. *See* Psoriasis.
Leprosy, 310.
Leucasmus (*λευκός* white), the same as *leucoderma*, a whitening of the skin from deficiency of pigment.
Leuce (*λευκὸς* white), *lepra leuce*, the white anæsthetic patch of true leprosy, 315.
Leucoderma, 401.
Leucopathia (*λευκὸς* and *πάθος* affection), pigment deficiency. It generally is applied to albinism.
Lichen (*λειχήν* lichen, a true moss). The Greeks applied the plural lichenes to scaly diseases. Lichen is now used to signify one of the papular diseases, 138.
Lichen planus, 144.
  ,, ruber, 144.
  ,, scrofulosum, 151.
  ,, tropicus, 484.
  ,, urticaria, 128.
Liver disorder, influence of, 10.
Liver-spot, a term applied to pigmentary stains or to chloasma, which is a parasitic disease.
Linear atrophy, 365.
Local dermal inflammations, 104.
Lotions, *see* Formulæ, 34 et seq.

Lupus erythematodes of Germans, 378.
,, (Latin for a wolf), so called from the ulcerating or devouring character of the disease. It is regarded as a scrofulous inflammation and ulceration, 369.
Lymphatics, disorder of, in skin disease, 7.

Maculæ (*macula* a stain), a discoloration of the skin, mostly pigmentary, 27.
,, syphiliticæ, 283.
Madura foot, a synonym for fungus foot of India, common at Madura, 468.
Maize, diseased, as a cause of disease, 130.
Malignant pustule, 238.
Malpighian layer, 15.
Mamma yaws, 97.
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,, ,, copaiba, 135.
,, ,, iodine, 133.
,, ,, belladonna, 135.
,, ,, sulphur, 136.
Mercurial remedies, *see* Formulæ Nos. 147 et seq., 174 et seq.
Melanoderma (*μέλας, μέλανος* black, *δέρμα* skin), black discoloration, 402.
Melanopathia, same as the last, black disease, 9.
Melas (*μέλας* black), the term applied to the black anæsthetic patch in true leprosy—*i.e.*, lepra melas.
Melasma (*μέλασμα* a black spot), the same meaning as melanoderma, 402.
Meliceris (*μέλι* honey, *κηρός* wax), the same as kerion.
Melitagra (*ἄγρα* seizure), honey-like eruption, or eczema impetiginodes in some of its aspects.
Mentagra (mentum chin, *ἄγρα* seizure), a term applied to sycosis, 459.
Mentagrophyton (*φυτον* a plant), parasitic sycosis, *see* Mentagra, 458.
Mercury in syphilis, 306.
Mercurial formulæ, *see* Formulæ, 142, 150, and 175 to 179.
Microsporon (*μικρός* little, *σπόρος* a seed), a generic term for certain vegetable parasitic fungi found in chloasma and alopecia areata.
Microsporon Audouini, the fungus of tinea decalvans, 461.
,, furfur, the fungus of chloasma, 463.
Miliaria (*milium* a millet seed), 483.
Miliary fever, an eruption of spots the size of millet seeds, due to vesicles produced as the result of excessive perspiration. *Sudamina* is the same disease, 483.
Molluscum (*molluscus, mollis,* soft), small soft tumours produced by distension of the sebaceous glands by secretion, applied at one time to *fibroma.* The resemblance to molluscous animals is stated to have suggested the application of the term, 491.
Molluscum contagiosum, 491.
Morbilli (*morbillus* distemper), measles, 87.
Mineral waters in skin diseases, *see* Formulary.
Morphœa (*μορφή* form), special diseases of the skin, in which a substance like hard wax is formed in the skin, 339.
Morve, a synonym of glanders.
Multiformity of eruption, 8.
Mycosis (*μύκης* a fungus), a synonym of frambœsia or yaws ; so used by Alibert, 96.
Mycetoma, the fungus foot of India, 468.
Myringomycosis, 474.
Myrmecia (*μύρμηξ* an ant), warts on the palms of the hands, or soles of the feet.

Nævus, a mark ; they are hairy, vascular, or pigmentary, 363.
Nails, diseases of,
,, parasitic, 466.
,, structure of, 23.
Neoplasma (*νέος* new, *πλάσμα* formation), a new formation, 369.
Nerve, disease originating in disorder of, 6.
Neuroses of the skin, 395.
Neurosis, nerve disorder, 6.
Ngerengere, the leprosy of New Zealand, 317.
Nigrities, Nigredo (*niger* black), darkness of the skin.

Noli me tangere (touch me not), lupus exedens.
Noma (νομή, from νέμω to spread), a general term for sloughing ulcers.
Norwegian scabies, 423.
Nosophyta (νόσος disease, φυτὸν a plant), vegetable parasitic diseases, *see* Tinea.

Occupation and disease, 64.
Old, diseases of the, 9.
Œstrus, 406.
Ointments, *see* Formulary.
Onychia (ὄνυξ the nail), inflammation of the nail, 466.
Onychomycosis (ὄνυξ a nail, μύκης a fungus), parasitic disease of the nails, 466.
Ophiasis (οφίασις, from ὄφις a serpent), serpentine. A bald place, in irregular band-like form.
Osmidrosis (ὀσμὴ odour, and ἵδρωσις sweating), fœtid perspiration, 480.

Pachydermia (παχὺς thick, δέρμα skin), a thickened state of skin, 358.
Pachydermatocele (Pachydermia, which see, and κήλη tumour), hypertrophy of the skin forming a tumour, 358.
Pachylosis (παχύλος thickish), the same as pachydermia.
Papillæ (*papula* a pimple) of skin, structure of, 18.
,, ,, of hair follicle, 20.
Papula (a pimple), a solid elevation of the skin of minute size, 30
,, varieties of, 30. Diagnostic features of different papulæ, 63.
Papular diseases, 137.
,, syphilis, 284.
Parasitic diseases, nature of, 405.
,, animal, 405.
,, vegetable, 425.
Parasites (*see* Fungi), 426.
Paratrimma (παρατρίβω to rub together), *see* Intertrigo.
Paronychia (παρὰ about, ὄνυξ, the nail).
,, whitlow, 469.
,, syphilitic, 295.
Pathology, general remarks on, 27.
Pediculus, the louse, 409.
,, body, 412.
,, pubis, 411.
,, head, 410.
Pellagra (Italian, *pelle* skin, *agra* rough), Italian leprosy, 128.
Pemphigus (πέμφιξ a bladder or blister), one of the bullous diseases, 211.
,, its varieties, 211.
,, the bullæ of, 32.
,, pruriginosus, 213, 220
,, syphilitic, 288.
Pernio (πτέρνα the heel), a chilblain, 108.
Perspiration, alteration of, 475.
Petechia (*petecchie*, Italian, a flea-bite), minute points of extravasated blood seen in purpura, 392
Phlyctæna (φλύκταινα a vesicle), a general term for vesiculæ and bladders.
Phlyctenosis, an eruption of phlyctenæ.
Phlyzacion (φλυζάκεον, φλύζω, to be hot), a pustule with a hard and inflamed base with a vivid red colour, and succeeded by a hard, dark, thick scab.
Phthiriasis (φθειρίασις, from φθείρ a louse), the lousy disease, or morbus pedicularis, 409.
Phyma (φῦμα a tumour, or φύω to spring forth), a small boil.
Phytoderma (φυτὸν a plant, δέρμα skin), any vegetable parasite that grows on the skin, hence phytodermata, the diseases in which fungi occur.
Pian (a raspberry), the same as frambœsia, 96.
Pigment alterations, 399.
Pityriasis (πίτυρον bran), a branny or scaly disease, 331.
,, pilaris, 254.
,, rubra, 253.
,, ,, anomalous form of, 258.
Plica polonica (*plico* to knit together), the Polish plait, a disease seen in Poland especially, in which the hair is much matted together.

Podelkoma, a synonym for the fungus foot of India, 468.
Pomphi, wheals, *see* next.
Pompholyx (*πομφόλυξ* a water bubble), the same disease as pemphigus.
Porrigo, a term applied to so many different diseases that it should be at once discarded to avoid endless confusion.
Porrigo scutulata, an old term for tinea tonsurans.
Prickly heat, 484.
Private practice, diseases seen in, 9.
Prognosis, general, 65.
Prurigo (*prurio* to itch), a particularly itchy and rashy disease, 156.
Pruritus (*prurio* to itch), itching, 396.
Psora (*ψωρά* the itch), scabies. The Greeks used the term to eczema.
Psoriasis, literally an itching disease. Some apply the term to lepra vulgaris ; Mr. Wilson to the scaly stage of chronic eczema, 259.
Psydracia (*ψυδράκιον*, *ψύδραξ* a blister on the tongue tip, from *ψυδρειν* to lie, or *ψυχρὰ ὑδράκια* cold blisters). An inflammatory pustule, less deep and red than phlyzacious pustules.
Pterygium (*πτέρυξ* a wing, *unguis* a nail), epidermis growing over the nail.
Pulex irritans, 405.
,, penetrans, 405.
Purpura (*purpureus* purple), the purple eruption caused by hæmorrhage into the skin, 392.
Purpura urticans, 119.
Pustula or Pustule, an elevation of skin produced by a collection of pus, 36, 64.
Pustula maligna, 238.
Pustular diseases, 223.
,, syphilis, 288.
Pyogenic (*πῦον* pus, *γένεσις* creation) pus producing.

RADESYGE. This, according to Boeck, is a bad form of syphilis.
Răkta pĭti, an Indian name for leprosy, 310.
Recurrent herpes, 285.
Renal, deficient secretion, 71.
Rete Malpighii, 14.
,, mucosum, 14.
Rhagades (*ῥαγάς* a rent or chink), a scab, fissure or chap.
Rheumatism, influence of, 71.
Rhinoscleroma (*ῥίν* the nose, *σκλήρωμα* a hardness, from *σκληρὸς* hard), 345.
Rodent ulcer (*rodo* to gnaw), a chronic ulcerating disease, the least expressed form of cancerous degeneration of the skin, 387.
Root sheaths of hair, 20.
Rosalia (*rosa* a rose), rose rash, an ally of scarlatina, 93.
Roseola (*roseus* rose-coloured), an acute febrile disease, accompanied by the development of a rash of rosy hue, 114.
Roseola syphilitica, 282.
Rotheln, a German term for rubella, or false measles, 93.
Rubella, a name given to a bastard form of measles by Dr. Veale, 93.
Rubeola (*ruber* red), measles, 87.
Rupia (*ῥύπος* dirt), a syphilitic crusting disease, 287.

SARCOPTES, a synonym of the acarus scabiei, 420.
Sarcocele, 359.
Satyriasis (*Σὰτυρος*, a satyr), a synonym of elephantiasis, from the fact that the countenance presents the aspect of a Satyr.
Sauroderma (*σαῦρος* a Saurian reptile, *δέρμα* skin), ichthyosis in which the plates or scales are like the outer covering of the Saurian reptiles.
Scabies (*scabere* to scratch), the itch, 417.
,, Norvegica, 423.
Scabities (*scaber* rough), thinness of the nails.
Scales, 38.
Scall (*scala* a scale), a term very variously applied ; it has no precise signification now-a-days.
Scarlatina (*scarlatto*, Italian, a red-coloured cloth). Scarlet fever, 87.
Scars, 47.

Scinde boil, 247.
Scleroderma (σκληρός hard, δέρμα skin), a disease in which the skin hardens and indurates, 342.
Scleroma and Scleriasis. The same as the last, 342.
Scratching, effect of, 53.
Scrofula, influence of, 72.
Scrofuloderma, explains itself as scrofulous disease of the skin, 276.
Scurvy, 393.
Seat, primary of diseases, 4.
Sebaceous glands, diseases of, 486; structure of, 21.
,, cysts, 491.
Seborrhœa (*sebum* or *sevum* suet, and ῥέω to flow), sebaceous flux, 486.
Senile decay, 366.
Shingles (*cingulum* a girdle), herpes zoster, 201.
Sibbens (from siwin, Celtic for raspberry, or sivvens wild rash), frambœsia.
Skin diseases, how to study, 2.
,, structure of, 14–24.
Soaps (*see* Formulary).
Spargosis (σπάργοσις swelling). The same disease as bucnemia tropica, 358.
Spedalskhed, a Norwegian term for true leprosy or elephantiasis Græcorum.
Spilus (σπῖλος a spot), a mole or pigmentary nævus.
Spindle-shaped cells in skin, 16, 18.
Squamæ, 38.
Squamous Diseases, 252.
Stages, significance of, in diseases, 2.
Stearrhœa (στέαρ fat, ῥέω to flow), the same as seborrhœa, excessive sebaceous secretion, 486.
Steatoma (στέαρ fat), a fatty tumour.
Steatozoon (ζῶον animal), the animalcule found in the sebaceous ducts, 490.
Stimulant remedies (*see* Formulæ).
Stomach, influence of disorders of, 10.
Strophulus (στρόφος a twisted band), ordinarily described as the lichen of children. It is the "red gum," "red gown," 153.
Strophulus, varieties of, 154.
Strumous diathesis and skin diseases, 11.
,, diseases, 276.
Sty (stihan, Saxon, springing-up), a small boil, formed by one of the suppurating Meibomian glands of the eyelids, 231.
Subcutaneous cellular tissue, structure of, 19.
Sudamina (sudo, to sweat), a vesicular eruption, the result of excessive sweating, the same as miliaria, 483.
Sulphur rash, 136.
Sweat glands, structure of, 22; diseases of, 475.
Swine-pox, 84.
Sycosis (σύκωσις fig-like, from σῦκον a fig), inflammation of the sebaceous follicles of the beard, 502
Syphilodermata (σίφλος defect, δέρμα skin), syphilitic skin eruptions, 277.
Syphilitic acne, 289; alopecia, 294; eruptions, general characters of, 280; dactylitis, 297; ecthyma, 289; exostosis, 296; herpes, 285; lichen, 284; maculæ, 283; onychia, 295; pemphigus, 287; roseola, 280; scaly, 290; tubercle, 291; ulcers, 294.

Tar acne, 133.
Teleangeiectasis (τέλειος complete, ἀγγεῖον a vessel, ἔκτασις extension), tumour formed by an excessive growth of vessels.
Temperament, effect of, 61.
Terminthus (τέρμινθος or τερέβινθος, the turpentine tree), a carbuncle in shape and size like the ripe core of the turpentine tree.
Tetter, of uncertain application, analogous to the word dartre.
Therapeutics, general principles of, 66.
Tinea (a moth or woodworm), the generic term for vegetable parasitic diseases, 324.
Tinea favosa, 429; its fungus, 430; tonsurans, 432; its fungus, 433; circinata, 447; sycosis, 457; its fungus, 458; decalvans, 460; its fungus, 461; versicolor, 462; its fungus, 463; kerion, 445.

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Trichinosis (νόσος disease), disease of the hair.
Trichogenous (θρὶξ the hair, γέννάω to generate), hair-producing.
Trichomyces (θρὶξ, τριχὸς hair, μύκης a fungus), any parasite of the hair.
Trichophyton (φυτὸν a plant), a vegetable parasite of the hair.
,, tonsurans, 433.
Tubboes, 98.
Tubercula (*tuber* a swelling), the plural of tuberculum, signifying a small swelling. Tubercula is applied to the group of diseases including cancer, lupus, fibroma, which commence by small indurations, 40, 64.
Tubercular leprosy, 311.
,, syphilide, 291.
Tylosis (τυλωσις, τύλος, a knot), callus, callosity, 333.
Typhoid fever, eruptions in, 87.
Typhus ,, ,, 86.

ULCERATION, 46.
Uniformity of eruption, 8.
Urticaria (*urtica* a nettle), nettle-rash, 116 ; in children, 124 ; papulosa, 124.
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